

**INTEGRATED AREA DEVELOPMENT PLAN  
OF  
PANWARI BLOCK**

**SUBMITTED TO  
THE UTTAR PRADESH DEVELOPMENT SYSTEMS CORPORATION LTD.**

**BY  
GIRI INSTITUTE OF DEVELOPMENT STUDIES  
LUCKNOW**





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## CHAPTER I

### INTRODUCTION

#### 1. The Background

The country after attaining independence had inherited problems of economic backwardness and instability caused by the World War. These problems were further aggravated as a result of the partition of the country. Initially, therefore, the scope for planned development was extremely limited because of the paucity of resources and the immediate needs for carrying out reconstruction and rehabilitation works, creation of basic infrastructure and increase in production and supply of essential commodities, particularly the foodgrains. The activities for planned development virtually started with the Second Plan. The main objective of planning upto the Third Five Year Plan was to achieve maximum possible growth rate. The assumption behind this objective was that growth by itself would lead to a redistribution in favour of the poor and, therefore, would help in solving the problems of poverty, unemployment and inequality. But, the achievements did not come up to the expectations. By the end of the Fourth Plan the country had become almost self-sufficient in food production but the gap between the rich and the poor continued to be widening.

With the beginning of the Fifth Plan special attention was paid on reducing the gap between the rich and the poor and on reducing inter-area disparities. Thus, the emphasis was shifted towards improving the living conditions of the rural poor. For achieving this objective a number of programmes were launched. These included : Drought Prone Area Programme (DPAP), Small

Farmers Development Agency (SFDA), Hill Area Development Programme (HADP) and Integrated Tribal Area Development Programme (ITADP) alongwith the National Minimum Needs Programme. But the problems of unemployment, poverty and inequality are not confined only to the backward and special problem regions. They are common in agriculture dominated rural areas. Thus, the need for lower level planning was evident.

The importance of sub-regional or lower level planning for narrowing down inter-regional and inter-district disparities was recognized during the Third Plan itself, but the formulation of district level plans was introduced, at the instance of the Planning Commission, during the Fourth Plan period. The initial exercise of formulation of district plans in the State however served only as a training to the officials posted at the district planning units. With major thrust on increasing productivity, social justice and employment, particularly for the people of rural areas, planning for districts started in the State mainly with the Fifth Plan, after the planning machinery at district level was strengthened.

For an equitable distribution of basic goods and amenities and more efficient use of the available physical, financial and manpower resources the programme of integrated rural development was also simultaneously conceived. According to the guidelines for lower level planning issued by the Planning Commission to the State Governments, block level planning should have been started from the Fifth Plan itself, but it was perhaps too early to have set the process because of financial and administrative reasons.

Thus, the formulation of plans at the block level started only with the beginning of the Sixth Five Year Plan.

The rationale behind the formulation of block level plans is as follows :

- i. better perception of basic issues at the 'grassroot' levels with specific attention on the rural poor, and formulation and execution of programmes and projects for their solution;
- ii. better exploitation of the growth potentials of an area for improving productivity and increasing production and employment;
- iii. opportunities for direct participation of the local population, particularly the majority of the poor, in decision-making for development at the lower level and also opportunities for participation of target groups concerned as an end itself; and,
- iv. mobilization of local resources, mainly surplus labour.

Since the main attack of the Sixth Five Year Plan was on poverty and unemployment, block level planning was considered as the principal instrument under the programme of Integrated Rural Development (IRD). This approach of the development planning is based on the assumption that poverty and unemployment/underemployment go together. The main objective of the micro-level planning is, apart from growth, diversification of economic activities and improvement in the quality of life of the masses.

## 2. The Plan for Panwari Block

### A. Scope :

The present integrated development plan for block Panwari of district Hamirpur has been formulated keeping in view the above mentioned background. The major thrust, however, has been on increasing, as far as possible, the employment opportunities as

well as income of the rural population. This will also help in reducing income disparities between the rich and the poor.

The basic premise of creating employment opportunities for the unemployed/underemployed population<sup>of</sup> an area is that they can be gainfully employed within the geographical boundary of that area. Although there are chances of getting employment in the adjoining or nearby areas but it is difficult to visualise the extent of such opportunities being available, since there is no mechanism of coordination in formulation of plans on inter-area basis. Thus, in a sense, the scope of block level plans is, at present, limited yet it has to go a long way towards fostering development in rural areas.

#### B. Objectives :

The aims of the integrated area development plan of block Panwari are :

- i. to study endowment conditions and resource potentials of the area and identify the major constraints to development;
- ii. to point-out the levels of development under different sectors in the block and its position in relation to district Hamirpur;
- iii. to review the performances of the on-going development programmes;
- iv. to formulate the strategy for development of the area in the long-term perspective;
- v. to identify central places and infrastructural gaps which could be bridged in future for facilitating the development of the area; and
- vi. to draw proposals, in terms of sectoral programmes and activities, for accelerating the pace of developmental activities keeping in view the creation of employment and income opportunities for the block population.



### C. Methodology :

The present exercise is based on the analysis of data, most of which were collected from the district and block offices. The discussions with officials of various departments of the district and non-officials including cultivators, agricultural labour and other segments of the population proved very beneficial. Their observations helped us in substantiating the data and determining priorities.

The present exercise has been initiated with a detailed study of the availability of resource potential. This is followed by the study of the levels of development and performance of various on-going programmes. This helped us in identifying the problems, difficulties and constraints to development, and, in formulating strategy for development of the area. The infrastructural requirements of the area were thereby worked out and proposed at appropriate places in the block. The central places were also identified as a part of this exercise. Taking into account the priorities problems and available resources in the block, programmes for different sectors have been proposed. While proposing different programmes attempt has been made, as far as possible, to keep in view their prospects for generating employment opportunities. The aspirations, felt needs, preferences and willingness of the people have been given due consideration while making the programme proposals.

### 3. Organization of the Plan

The present document has been divided into eight chapters dealing with different aspects of the plan. The first chapter presents the rationale behind block level planning, as an approach



to development, and the scope, objectives and methodology adopted in the formulation of the indicative plan for block Panwari, district Hamirpur. The second chapter indicates the background of the block in terms of physical conditions and socio-economic status. The performance of the on-going development programmes have also been examined for assessing the scope for various developmental activities and constraints to development of the block in the desired directions. The third chapter deals with the long-term employment perspective and strategy for development. The fourth chapter deals with the rationale for identification of central places in the block and discusses their characteristics and the hierarchical pattern. The fifth chapter provides an account of proposed programmes for different sectors of the economy. The sixth chapter discusses certain aspects of plan implementation. The seventh chapter deals with financial implications of the proposed programmes. The last or the eighth chapter examines the appropriateness or otherwise of the existing organizational set-up at the block level, towards making it more effective in planning and implementation of the block level development programmes.

## CHAPTER II

### EXISTING PROFILE

#### The District in Brief

Block Panwari is among the eleven blocks of district Hamirpur, a central district of Jhansi Division and a part of Bundelkhand region. It is bounded by districts of Kanpur and Fatehpur on the north, Banda on the east, Jhansi and Jalaun on the west and the State of Madhya Pradesh on the south. The district lies between latitude  $25^{\circ} 7^1$  N. and  $26^{\circ} 7^1$  N and longitude  $79^{\circ} 17^1$  E and  $80^{\circ} 21^1$  E.

The district with an area of 7192 sq. km. can be divided into three main sub-regions, namely plains, the middle part and plateau, identified on the basis of soil structure, rainfall, geological situation and vegetations. The region of plains has a very productive soil called Parua. The middle part has Rackar soil where potentialities for minor irrigation schemes are meagre. The plateau region consists of hard stones and rocks. But, some of its areas also have Mar and Kabar soil, that are productive but require careful management.

The district has distinct features of the Bundelkhand region. In the south numerous outcrops of gneiss rocks, tending to cluster into low ranges, surrounded by uneven broken tracts and covered for the most part with stemmed jungle are succeeded by a more level tract in which the hills grow sparser. From them stretches northward the alluvial plain. The dividing line between these two tracts runs roughly east and west through the town of Rath. The course of the hills may be traced running in narrow chains frequently dipping under the soil and reappearing at intervals of 1.6 to 6 kms. The three southern tehsils of Charkhari, Kulpahar

and Mahoba may fairly be described as hilly tracts, though the rocky outcrops seldom exceed 100 or 130 meters above the level at their base.

The main rivers of the district are the Yamuna and tributaries, the Betwa, the Dhasan and the Ken. There are a number of minor streams which are for the most part mere torrents.

The temperature in summer varies between 28°C and 43°C while in winter it goes down to 2°C - 3°C. The average annual rainfall has been 851 mm.

The district has only five towns, namely Charkhari, Hamirpur, Mahoba, Mahoba and Rath, covering only about 0.31 per cent of the geographical area and representing 9.91 per cent of the total population in the year 1971. The population of the district in 1971 was 988,215, with the proportion of the scheduled castes at 25.55 per cent. About 92.96 per cent of the scheduled castes belonged to the rural areas.

The number of Gram Sabhas in the district is 670 and Nyay Panchayats 98. For the purpose of administration and development work the district is divided into five tehsils of Hamirpur, Rath, Charkhari, Maudaha and Mahoba. The tehsils are further divided into eleven development blocks. These blocks have 110 VLW circles, i.e. ten VLW circles per block. The geographical area of these blocks and the number of villages comprising them varies significantly. The details are presented in the Table II - 1.

Table II - 1 : Area and Number of Villages Under Different Blocks

Tehsil	Block	Geographical Area (sq.km.)	Total Villages	No. of Inhabited Villages
1. Hamirpur	Sumerpur	630	110	85
	Kurara	451	84	63
2. Rath	Sarila	646	85	66
	Gohand	517	88	74
	Rath	471	86	62
3. Charkhari	Panwari	537	131	106
	Charkhari	919	148	113
5. Naudaha	Muskara	629	79	60
	Maudauha	937	126	112
5. Mahoba	Jaitpur	535	109	92
	Kabrai	920	105	97
Total District		7192	1151	930

Source : Office of the Statistics Officer, Hamirpur, Sankhkiya Patrika, District Hamirpur, 1979, p.23.

Certain public facilities in terms of their numbers in the year 1979 in the district were : Panchayat Ghar 125, Post Offices 211, Telegraph Offices 18, Telephone connections 276, Police Stations/Outposts 38, Bus Stations 82, Railway Stations 13, Nationalised Banks 20 and Commercial Banks 10.

Among the educational institutions, the district has 1062 Junior Basic Schools (816 for boys and 246 for girls), 144 Senior Basic Schools (94 boys and 50 girls), 38 Higher Secondary Schools (33 boys and 5 girls), 3 degree colleges and 11 Public Libraries.

For general health care the different medical establishments were Allopathic hospitals/dispensaries 48, Ayurvedic dispensaries 24, Unani 4 and Homeopathic dispensaries 8. Besides, there were 14 family welfare centres and 45 maternity and child welfare

centres. Thus, the total number of medical and health units in the district were reported to be 143.

Out of 930 inhabited villages in the district only 197 or 21 per cent had power connections by the end of March 1979. These connections included for domestic and agricultural and industrial uses both.

Other facilities, in the district ment particularly for cultivators include seed godowns numbering 51, fertilizer godowns with a capacity of 6407 MT, insecticides depot 14, agricultural implements repair centres 24, veterinary hospitals 19, artificial insemination centres 10 and stockmen centres numbering 25.

### The Block Panwari

#### A. Physical Conditions

As indicated above (Table II - 1) block Panwari is among the two development blocks of tehsil Charkhari. The headquarters of the block i.e. Panwari lies in latitude  $25^{\circ} 29^1$  N and longitude  $79^{\circ} 29^1$  E in the extreme west of the tehsil. It is situated at 102 kms. south-west of the district headquarters. On its west is district Jhansi, east side is block Charkhari, north side is block Rath and south side is block Jaitpur. Its south-west boundaries are coterminus with Madhya Pradesh.

The area of the block is 537 sq.km. (about 53700 hectares). It falls under the plateau region of the district, which may be described as hilly tract consisting of hard stones and rocks. Due to this characteristic boring for wells has been successful in this block only to some extent.



Mainly, two types of soils are found in this block, namely Mar and Kabar. The two soils are sub-classes of the Bundelkhand type 3 soil. The Kabar soil, which is a coarse grained loam in texture, mature in profile and dark gray to black in colour, has a high clay element between 20% to 50%, the coarse sand and solvable salts being low, lime content being about 1% and magnesia even less. It is very productive but requires careful management. Even a slight diversion from the agricultural time table renders it unsuitable for cultivation in both Rabi and Kharif seasons. The main crops suitable for this type of soil are paddy, jowar, bajra, masur, berseam, pea, gram, wheat and barley.

The Mar soil is the Bundelkhand type 3 B, clayey in texture, mature in profile and black in colour. Kankar beds occur in such soil areas. The percentage of clay in Mar is high i.e. 40-50% but coarse sand and solvable salt is low as is also the case with lime and magnesia. The drainage in the tracts where this soil is found is mostly poor and the management practices and cropping pattern are almost the same as applied to Kabar.

As far as minerals are concerned the deposits of granite stone is found in abundance in some villages of the block. It can be a good source of supply of grits for construction activity, and for construction of roads and railway tracks. But, there is no stone crushing unit in the block and such units in other blocks are not able to meet the increasing demand of grits.

The forests are scattered throughout the block, covering 6 per cent of the area. The tendu trees abound in these forests. The tendu leaves are used in a profitable manner by using them in Biri making. There are some other forest products like honey, wax

and lac but their yield is negligible. Firewood is also available to the local population from the forests.

The river Dhasan passes through the block. It separates Panwari block with district Jhansi. The river touches twelve villages of the block. They are : Seonrhi, Silarpura, Lakhaniyan, Nagraghat, Barano, Rupnaul, Bihat, Luhargaon, Dharwar, Lilwa, Kashipur and Raipura Hardo Nisf.

The climate of the area is characterised by an intensely hot summer, a pleasant winter and general dryness except during the monsoon season. The statistics relating to the climate and rainfall are however not available for the block. The temperature reported for the district varies between  $28^{\circ}\text{C}$  and  $43^{\circ}\text{C}$  in summer, while in winter it goes down to  $2^{\circ}\text{C}$  -  $3^{\circ}\text{C}$ . The average annual rainfall in the district is 851 mm whereas in tehsil Charkhari (which include block Panwari) the average rainfall has been reported at 885 mm. The rainy season normally starts from the second fortnight of June and continues upto September. But, the main months of this season are July and August. The data based on 50 year's average shows that in Charkhari tehsil, which comprises the blocks Panwari and Charkhari, the rainfall is heavier than the district as a whole. (Table II - 2).

Table II - 2 : Normal Rainfall mm.

	Tehsil Charkhari		Hamirpur District	
	a	b	a	b
January	14.7	1.4	13.5	1.2
February	11.4	1.2	12.8	1.1
March	8.9	0.8	7.1	0.7
April	4.1	0.4	4.3	0.4
May	7.6	0.8	6.1	0.7
June	85.3	4.5	69.6	4.1
July	284.7	13.3	275.8	12.5
August	284.0	13.1	277.4	12.5
September	144.6	6.8	145.9	6.9
October	23.1	1.2	23.3	1.2
November	9.1	0.6	8.3	0.5
December	7.4	0.7	6.6	0.6
Annual	885.1	44.8	850.7	42.4
Highest annual rainfall as % of normal year	165 (1919)		158 (1919)	
Lowest annual rainfall as % of normal year	36 (1918)		36 (1918)	

a = Normal rainfall in mm. based on 50 year's average

b = Average number of rainy days (days with rain of 2.5 mm. or more)

The block which was established on April 1, 1962 consists of 131 villages, out of which 25 are uninhabited. Seventy of its villages have Gram Sabhas and eight have Nyaya Panchayats. Its area is 537 sq. kms. i.e. 53700 hectares. For the purpose of administration it is divided into ten VLW circles. It has pakka roads and is connected to State Highways 21 and 44.



### B. Demographic Structure

1. Population : According to Census 1971 the population of block Panwari was 74244. There is no town in the block. At the district level, however, the percentage of population of the rural areas is 90.09. The Table II - 3 shows some of the demographic indicators for the block, compared with the district as a whole.

Table II - 3 : Population Characteristics

Sl. No.	Particulars	Panwari	Hamirpur
1.	Total Population		
	Total	74244	988215
	Male	39213	526176
	Female	35031	462039
2.	Percentage of Scheduled Caste population to total population		
	Total	31.40	25.55
	Male	31.14	25.17
	Female	31.69	25.99
3.	Percentage of rural population	100.00	90.09
4.	Density of population per sq. km.	138.3	137.4
5.	Literacy percentage		
	Total	17.39	20.25
	Male	27.96	31.15
	Female	5.56	7.83
6.	Number of inhabited houses	11733	157344

Source : District Census Handbook, Hamirpur, 1971

The above table indicates that the block represents 7.51% of the district's population. The density of population per sq. km. of area during 1971 was 138.3 against 137.4 for the district and 300 for the whole of Uttar Pradesh. The whole district is sparsely populated on account of the physical conditions. The percentage of Scheduled Caste population in the block was 31.4 in the year

1971. This figure stood markedly high in relation to those for the Hamirpur district (25.2), Bundelkhand Region (25.3) and the State of Uttar Pradesh (21).

The percentage of literacy in this block in 1971 was 17.39 as against 20.25 for the district and 21.7 for the state. This percentage among females was only 5.56 for the block, being lower than the district and state's figures of 7.83 and 10.55.

2. Occupational Structure : According to Census 1971 the number of workers in the block were 24663 i.e. 33.22% of the population as against 32.72% in the district. The distribution of workers engaged in primary (i.e. agriculture, animal husbandry, forestry, fisheries and mining), secondary (i.e. manufacturing and construction) and tertiary (i.e. commerce, transport and communication and other services) sectors is presented in Table II - 4.

Table II - 4 : Occupational Structure

Sl. No.	Particulars	Panwari	Hamirpur
1.	Total workers		
	Male	20805 (84.40)	275736 (85.28)
	Female	3858 (15.60)	47594 (14.72)
	Total	24663 (33.22)	323330 (32.72)
2.	Workers in :		
	Primary Sector	22738 (92.19)	279494 (86.44)
	Secondary Sector	771 (3.13)	16213 (5.01)
	Tertiary Sector	1154 (4.68)	27623 (8.55)
3.	Cultivators and Agricultural Labourers	22302 (90.43)	274212 (84.81)

Source : District Census Handbook, Hamirpur, 1971.

Note : Figures in parentheses at Sl.No.1 denote percentage to total population, whereas figures in parentheses at Sl.No.2 and 3 denote percentages to the total number of workers.

The data in Table II - 4 shows that the proportion of females in the work-force is slightly higher in the block as compared to the district. Considering the sectoral distribution of the work-force in 1971, we find that 92 per cent of the working population of the block was engaged in Primary Sector as against 86 per cent in the district. More than 90 per cent of the workers were cultivators and agricultural labourers in the block and 85 per cent in the district. Thus, agriculture occupies the main position in the economy of the block as over nine-tenths of the total workers were dependent on it. The share of secondary and tertiary sectors, therefore remains insignificant. The scope for expansion of these sectors in the block also seems to be limited.

3. Family Units : The population of the block i.e. 74244 persons, belong to 13321 families (average 5.6 members per family). These families are living in 106 villages. Some of these villages have a very small population, even to the extent of eleven persons in two of the villages, with three and four families. The data pertaining to the size of villages in terms of number of families and their population is presented in the following table.

At the block level, we find that the average population per village was about 700 persons. Above this average size were 46 or 43 per cent of the village. The remaining 60 villages, constituting the majority, had an average population of only 281.03 as against an average of 1247.86 persons for the formerly mentioned 46 villages. The majority of the villages are, small, falling in population range of upto 500.

Table II - 5 : Classification of Villages by Number of Families and Total Population

Families Per Village	Total Villages	No. of Families		Total Population	Average Population per Village
		Total	Average per village		
Upto 25	16	253	15.8	1462	91.38
26 - 50	14	487	34.8	2685	191.79
51 - 75	16	1036	64.8	5685	355.31
76 - 100	14	1145	81.8	7030	502.14
101 - 150	12	1485	123.8	8458	704.83
151 - 200	14	2469	176.4	13484	963.14
201 - 250	6	1347	224.5	7347	1224.50
251 - 300	6	1664	277.3	8764	1460.67
301 and above	8	3435	429.4	19349	2418.63
Total	106	13321	125.7	74244	700.42

Source : District Census Handbook, Hamirpur, 1971.

### C. Socio-Economic Status

1. Size of Landholdings : The main occupation of population of the block is agriculture as about 90 per cent (54.65% farmers and 35.78% agricultural labourers) of total workers were engaged in that sector. In comparison about 84 per cent (51.74% farmers and 33.07% agricultural labourers) of total workers were engaged in this occupation in the district.

We find 6.93% of the total area under agriculture in the block was shared by 36.4% of farmers (5.86% and 35.5% respectively in the district) who had holdings of less than one hectare. About one-fifth i.e. 20.99% of total agricultural area was shared by 36.6% of farmers in the block and 21.23% of area by 34.5% of farmers of the district in the landholding size group of 1 to 3

hectares. The largest area (72.28% in the block and 72.91% in the district) was shared by only 28 per cent of farmers of the block and 30 per cent of the district. Thus, they had holdings of more than three hectares each.

2. Land Use Pattern : The total area of the block in 1978-79 was 53715 hectares out of which 70.27% was under cultivation. This percentage for the block is almost at par with that for the district level, viz., 71.35%.

According to Table II - 6, the forests cover 6.03% of the reporting area of the block as against 4.50% in the district. The culturable waste and fallow land, which can be exploited for purpose of cultivation in future, is 13.29% in the block and 14.50% in the district.

Table II - 6 : Land Use Pattern During 1978-79

Sl. No.	Particulars	(Area in ha.)	
		Panwari	Hamirpur
1.	Geographical Area	53715	716873
2.	Forests	3241 (6.03)	32229 (4.50)
3.	Culturable Waste	2979 (5.55)	42979 (6.00)
4.	Fallow Land	4161 (7.74)	60908 (8.50)
5.	Barren and Unculturable Land	2213 (4.12)	26213 (3.65)
6.	Land Under Non-agricultural Uses	2841 (5.29)	42156 (5.74)
7.	Pastures	-	445 (0.06)
8.	Area under other trees and bushes which is not included in net area sown	535 (1.00)	1405 (0.20)
9.	Net Area Sown	37745 (70.27)	511538 (71.35)
10.	Gross Cropped Area	40020	531399
11.	Intensity of Cropping	106.03	103.88
12.	Net Irrigated Area	8976	92988
13.	Gross Irrigated Area	9024	94107

Source : Statistical Bulletin, 1979, Office of the Economics and Statistics Officer, Hamirpur.

Note : Figures in parentheses against Sl.Nos.2 - 9 denote percentages to Sl.No.1, whereas figures given against Sl.No.11 are derived after dividing gross cropped area by net area sown.



The percentage of net irrigated area to net area sown in the block during 1978-79 was 23.78 which is higher than the percentage at the district level, which comes to 18.18. Similarly, the percentage of gross irrigated area to gross cropped area was 22.55 in Panwari and only 17.71 in Hamirpur.

The man-land ratio, which is the ratio of total number of workers depending on agriculture (cultivators and agricultural labourers) to the net area sown, is 0.59 per hectare in the block as compared to 0.54 in the district. It is, therefore, evident that the pressure on land in both Panwari as well as Hamirpur is quite low.

Considering the low man-land ratio and intensity of cropping it may be concluded that : (a) owing to lack of facilities, particularly irrigation, double cropping is not very popular in the area, and (b) the low man-land ratio indicate that in the present set-up the marginal returns from land with respect to labour inputs are extremely limited due to the resource constraints and lack of infrastructural facilities.

3. Area Under Different Crops : According to the distribution of area under different seasons and crops in the block we find the major crop grown in the Kharif season is Jowar and those in the Rabi season gram, wheat and arhar. A similar pattern has been found for the district as a whole. The area distribution of different crops is given in the following table.

Table II - 7 : Cropping Pattern During 1977-78

(In Ha.)

Main Crops	Panwari		Hamirpur	
	Area	% to G	Area	% to G
<u>A. Kharif</u>				
1. Paddy	632	1.65	5179	1.01
2. Jowar	8442	22.09	92576	18.08
3. Urad	379	0.98	3171	0.52
4. Moong	52	0.14	238	0.05
5. Small Millets	735	1.92	5566	1.09
6. Bajra	8	0.02	1801	0.25
Total	10248	26.80	108531	21.00
<u>B. Rabi</u>				
1. Wheat	9764	25.55	130574	25.49
2. Barley	972	2.54	5112	1.00
3. Gram	11198	29.30	186177	36.35
4. Pea	42	0.11	1052	0.20
5. Masur	1047	2.74	14568	2.83
6. Arhar	2815	7.63	31442	6.13
Total	25838	67.87	368925	72.00
<u>C. Commercial Crops</u>				
1. Linseed	568	1.49	12667	2.47
2. Til	923	2.41	13224	2.58
3. Sugarcane	327	0.86	2145	0.42
4. Rapeseed, Mustard	47	0.12	4055	0.79
5. Groundnut	14	0.04	151	0.03
6. Tobacco	11	0.03	91	0.02
7. Sann-Hemp	129	0.34	2241	0.44
8. Potato	17	0.04	143	0.03
Total	2036	5.33	34717	6.78
D. Total Cereals	20553	53.77	240808	47.02
E. Total Pulses	15533	40.90	236648	46.20
F. Total Commercial Crops	2036	5.33	34717	6.78
G. Total All Crops	38122	100.00	512173	100.00

Source : Statistical Bulletin, 1979, Office of the Economics and Statistics Officer, Hamirpur.

The above table indicate that the percentage of area covered under food-crops during Rabi was two and a half times that of the Kharif season. At the district level this gap is wider. This indicates very limited utilisation of the land during the Kharif season. Only 5.33% of the total area was covered by commercial crops in the block as against 7 per cent in the district, which suggests the possibility of increasing the coverage of commercial crops in the block. It is found that the area covered under commercial crops, particularly, sugarcane, rapeseed, mustard and potato is very small. The cultivators, particularly, small and marginal farmers who constitute the majority find themselves unable to apply costly inputs like fertilizers and pesticides, because of the lack of resources at their command.

4. Agricultural Production and Productivity : As presented in the following table 14.37% of total food production of the block in 1977-78 is from the Kharif crops as against 14.23% in the district. More than half (51 per cent) of the production in the block and 63.61% of the district comes from the Rabi crops. About one-third of the blocks' production is related to the commercial crops as compared to 22.16% of the district Hamirpur. It is, therefore, evident that agricultural production in both Kharif and Rabi crops has not been proportionate to the area put under cultivation during these crop seasons. We find a lower percentage of output at block and the district level both.



A comparative study of tables II-7 and II-8 shows that during Kharif season production of all the crops has not been in proportion to the area covered under this season. During Rabi, percentage of production of wheat in the block has been near to the percentage of area in which it was sown. But, even in this crop production in the block has been below proportion to the district. Production of other crops during this season has been significantly lower to the proportion of area covered under these crops. Among the commercial crops, production of sugarcane and potato has been significantly higher in proportion to the area covered under them, though, the area put under these crops has been very small. The details of production are given in table II-8.

Table II - 8 : Agricultural Production During 1977-78

(in Qtls.)

Main Crops	Panwari		Hamirpur	
	Production	Percentage	Production	Percentage
<u>A. Kharif</u>				
1. Paddy	3356	1.16	27500	0.74
2. Jowar	55042	18.98	603596	16.18
3. Urad	675	0.28	5644	0.15
4. Moong	101	0.03	449	0.01
5. Small Millets	4523	1.56	34953	0.94
6. Bajra	45	0.02	10109	0.27
Total	63742	21.98	682251	18.29

Table II - 8 (contd.)

Main Crops	Panwari		Hamirpur	
	Production	Percentage	Production	Percentage
<u>B. Rabi</u>				
1. Wheat	108317	37.36	1361020	36.48
2. Barley	7883	2.72	42340	1.13
3. Gram	76796	26.48	1256550	33.68
4. Pea	284	0.10	7000	0.18
5. Masur	5089	1.75	70800	1.90
6. Arhar	27869	9.61	311276	8.34
Total	226238	78.07	3048986	81.72
<u>C. Commercial Crops</u>				
1. Linseed	1778	1.16	39648	3.73
2. Til	683	0.44	9786	0.92
3. Sugarcane	147570	96.07	967609	91.10
4. Rapeseed, Mustard	122	0.08	10502	0.99
5. Groundnut	104	0.07	1120	0.11
6. Tobacco	114	0.08	940	0.09
7. Sann-Hemp	613	0.40	10645	1.00
8. Potato	2604	1.70	21900	2.06
Total	153588	100.00	1062150	100.00
D. Total Cereals	179166	61.79	2079518	55.73
E. Total Pulses	110814	38.21	1651719	44.27
F. Total Food Grains	289980		3731237	
G. Total Commercial Crops	153588		1062150	

Source : Statistical Bulletin, 1979, Office of the Economics and Statistics Officer, Hamirpur.

Note : Percentages have been drawn from total foodgrains in case of cereals and pulses and other crops to total commercial crops.

It may be seen from table II-7 that 53.77% of the sown area in the block was covered by cereals as against 47.02% in the district. Compared with it, output of these crops in the block has been 61.79% of the total food production as against 55.73% of the district. Pulses were sown in 40.9% of the sown area of the block and 46.20% of the district. The production of these crops has been only 38.21% in the block and 44.27% in the district (table II-8).

Towards examining the possibility of increasing agricultural production in the block, it is necessary to look at the yield rates of various crops. The table II-9 gives the yield rates of important crops of the block and compares them with corresponding estimates for Hamirpur district and Uttar Pradesh.

Table II - 9 : Yield Per Hectare of Important Crops  
(1977-78)

(in Qtls.)

Crops	Panwari Block	Hamirpur District	Uttar Pradesh
1. Paddy	5.31	5.31	11.14
2. Jowar	6.52	6.52	8.18
3. Urad	1.78	1.78	3.71
4. Moong	1.94	1.89	3.30
5. Bajra	5.63	5.61	7.80
6. Wheat	11.09	10.42	14.62
7. Barley	8.11	8.28	10.86
8. Gram	6.86	6.75	7.29
9. Masur	4.86	4.86	N.A.
10. Arhar	9.56	9.90	14.41
11. Linseed	3.13	3.13	N.A.
12. Sugarcane	451.28	451.10	469.41
13. Rapeseed, Mustard	2.60	2.59	4.19
14. Potato	153.18	153.15	127.58
15. Til	0.74	0.74	N.A.

Note : Yield per hectare for a crop has been obtained by dividing the total production of a crop by area covered under that crop.

N.A. : Not available.

It is evident from table II - 9 that as compared to the state per hectare productivity of crops in the district is significantly low except in the case of potato. Per hectare yield of paddy and Urad in the district is even less than half of the State's yield rates.

The position of Panwari in relation to the district shows that the yield rates were similar in case of Paddy, Jowar, Urad, Masur, Linseed and Til crops. The yield rates in the block were slightly higher in respect of Moong, Bajra, Wheat, Gram, Sugarcane, Rapeseed, Mustard and Potato and lower in case of Barley and Arhar crops, as compared to the district.

The low productivity level in the region in comparison to the state may be attributed to the lack of infrastructural facilities, particularly irrigation, and of improved agricultural practices and use of inputs such as fertilizer and pesticides, given the quality of the land resource and climate.

5. High Yielding Varieties : In the following table gives the area under high yielding varieties of paddy and wheat, the only two HYV crops grown in the block.

Table II - 10 : Area Under High Yielding Varieties of Paddy and Wheat During 1978-79  
(in hectares)

Particulars	Panwari	Hamirpur
1. Total Area Under Paddy	632	5179
2. Area Under H.Y.V. of Paddy	434 (68.67)	3242 (62.60)
3. Total Area Under Wheat	9764	130574
4. Area Under H.Y.V. of Wheat	5034 (51.56)	41784 (32.00)

Source : Statistical Bulletin 1979, Office of the Economics and Statistics Officer, Hamirpur.

Note : Figures in parentheses denote percentages to the total area under respective crops.

We find that 68.67% of the total paddy area was under the high yielding varieties in the block as against 62.6% in the district. The area under high yielding varieties of wheat was 51.56% of the total area covered under this crop in the block, compared to only 32.0% in the district. However, irrigation facilities for the area under HYV of paddy were extremely poor as only 4 hectare (0.92%) of the area covered under these varieties had irrigation facilities in the block and 308 hectare (9.5%) in the district. The entire area under HYV of wheat had irrigation facilities both in the block and in the district. This explains, to certain extent, the low yield rates of paddy in comparison to the state.

6. Irrigation : During 1978-79, we find that 23.78% of the net area sown in Panwari was under irrigation as against only 18.18% in Hamirpur district. Out of an irrigated area of 8,976 hectare in the block 84.96% was irrigated through government sources and 15.04% through private sources. Compared to it, out of an area of 92,988 hectares in the district, 86.32% was irrigated through government sources and 13.68% through private sources.

The details of the various sources available for irrigation in the block and the area irrigated by them are presented in table II - 11.



Table II - 11 : Sources of Irrigation and Net Irrigated Area (1978-79)

Source	Panwari		Hamirpur	
	Availabi- lity	Area Irri- gated (Ha.)	Availa- bility	Area Irri- gated (Ha.)
1. Canal (Km.)	83	7626 (84.96)	900	76577 (82.35)
2. State Tube-well (No.)	-	-	140	3688 (3.97)
3. Private Tubewell (No.)	-	-	399	892 (0.95)
4. Pumping Set (No.)	526	257 (2.86)	4888	1288 (1.39)
5. Masonry Well (No.)	1592	1087 (12.11)	12887	9751 (10.49)
6. Persian Wheel (No.)	74	-	482	-
7. Ponds (No.)	6	6 (0.07)	46	792 (0.85)
8. Bundhis (No.)	460	-	5893	-
Total	-	8976	-	92988

Source : Statistical Bulletin, 1979, Office of the Economics and Statistics Officer, Hamirpur.

Note : Figures in parentheses denote percentage to the corresponding totals.

It is evident from the above table that canal is the most significant source of irrigation in the area. As to other Government sources, there are no state tubewells in the block though 140 were reported to be working in the district covering about 4 per cent of net irrigated area. A number of Bundhis were constructed in the block as well as in the district but it appears they could not contribute to the potentials of irrigation in any considerable measures either in the block or in the district as a whole.

Among the private sources of irrigation there are 526 pumping sets which are being used for lifting water for irrigation purposes. There are 1666 masonry wells out of which 74 are fitted with persian wheels. Considering the area irrigated by ponds the potential of ponds in the block appears to be quite small as compared to that in other parts of the district.

One important feature of irrigation in the block is that the utilization of the various sources has been much below their potential. For example from the reported 526 pumping sets the area irrigated by them in block was only 257 ha. or less than half hectare per pumping set in the year 1978-79. The figure for the district comes only to 0.26 ha. per pumping set. In the case of masonry wells 56.9% of their potential is being utilized in the block and 63.05% at the district level, assuming the potential of 1.2 ha. per masonry well.

While describing the availability of irrigation facilities in the block, it would be relevant to see as to which are the irrigated crops and to what extent their irrigation requirements are met. The crop-wise irrigated area estimates are shown in the following table.

Table II - 12 : Irrigated Area Under Different Crops  
(1977-78)

Crops/Crop Groups	Percentage of Irrigated to Total Area Under the Crops	
	Panwari	Hamirpur
1. Paddy, Jowar, Bajra and Small Millets	0.05	0.29
2. Wheat	44.92	32.64
3. Barley	27.26	32.88
<u>Total Cereals</u>	14.66	10.45
4. Urad and Moong	-	0.09
5. Gram and Pea	25.91	18.28
6. Masur	62.56	26.41
7. Arhar	-	-
<u>Total Pulses</u>	22.82	75.45
8. Linseed	11.97	4.63
9. Til	-	-
10 Sugarcane	99.08	94.13
11 Rapeseed, Mustard and Groundnut	9.84	20.68
12 Tobacco*	90.91	96.70
13 Sann-Hemp	-	-
14 Potato*	94.12	95.80
<u>Total Other Crops</u>	20.83	10.67
All Crops	45.25	33.74

\*Areas under these crops are quite small.

As shown in table II - 12 the percentage of irrigated to total area under cereal crops in Panwari was 14.66 which is higher by over 4 percentage points as compared to the figures for the district Hamirpur. The irrigated area under pulses was however significantly lower in proportion in the block as against the district; the percentage of irrigated area to total pulses area in the district was 75.45 while that for the block was only 22.82.



Among the pulses urad, moong and arhar are not irrigated. The irrigation of paddy, jowar, bajra and small millets, all of which are kharif crops, is almost negligible.

7. Consumption of Fertilizers : The level of consumption of fertilizers in the block is comparatively higher than that in the district. The following table shows the distribution of fertilizers per hectare of gross cropped area in the block as well as in the district. We find that consumption of Nitrogen and Phosphatic and Potash fertilizers was 3.593, 2.004 and 0.105 kg. per hectare in the block as against 2.584, 1.814 and 0.137 kg. per hectare in the district. The details are presented in table II - 13.

Table II - 13 : Distribution of Fertilizers (1978-79)

Particulars	Panwari	Hamirpur
1. Distribution of fertilizers (MT)		
a) $N_2$	143.8	1373.4
b) $P_2 O_5$	80.2	964.0
c) $K_2 O$	4.2	72.6
Total (a+b+c)	228.2	2410.0
2. Gross cropped area (Ha.)	40020	531399
3. Distribution of fertilizers per hectare of gross cropped area (Kg.)		
a) $N_2$	3.593	2.584
b) $P_2 O_5$	2.004	1.814
c) $K_2 O$	0.105	0.137
Total (a+b+c)	5.702	4.535

Even though the per hectare consumption of fertilizers is a little higher in the block, it is still far below the required level. It may be pointed out that as compared to the data for the state the consumption of fertilizers in district Hamirpur (including block Panwari) is very low. The per hectare consumption of nitrogenous, phosphatic and potassic fertilizers at the state level was 33.3, 8.9 and 3.4 (Total = 45.6) kg. The consumption of all fertilizers per hectare of gross cropped area in the block was however only 12.5% of the state's average. The gap was most marked in case of potassic fertilizers where this percentage stood at 3.09.

8. Cooperatives : There are 29 multi-purpose cooperative societies and nineteen primary agricultural credit societies in the block. The membership of the agricultural credit societies was 6141 in 1978-79. The total loan advanced to the members of these societies during 1978-79 was 14.14 lakhs. Thus, on an average, each member received loan worth Rs.230.28 from these societies in the block. The credit/share capital ratio was 3.08 : 1; whereas the corresponding ratio for the district was 4.10 : 1.

The progress in working of cooperatives shows that during 1978-79 membership increased by 737 in the block. The share capital increased by Rs.49811 and increase in deposits was Rs.28315. The recovery of loans was Rs.337074. But, considering the targets, except in the case of increase in share capital, these results are not very impressive, for example, membership increased by 36.85%, deposits increased by 70.79% and recovery of loans was recorded by only 5.61% of the targets for the year. Increase in share capital was, however, higher i.e. 124.53%, of the target during the year 1978-79.

Considering the targets for increase in membership and share capital it may be mentioned that had the targets were achieved each member would have contributed Rs.20 whereas the figures for achievements show an average contribution of members was Rs.67.59. We may, therefore, infer that relatively better off cultivators were joining these societies.

9. Animal Husbandry : The livestock population in terms of drought power per hectare of net area sown is considered to be a measure of agricultural input. The availability of milch cattle is a measure for production of milk. Besides, the livestock population also gives an indication of the extent of availability of raw materials for activities like tanning, leather and bone meal production. The total livestock population of Panwari is 41703. The adult cows and she-buffaloes constitute 9.89% of the animal population which is lower than 12.47% for the whole district. The percentage of adult bullocks and he-buffaloes in the total animal population of the block is 23.67 as against 25.09 of the district.

The details of the livestock population are given in tables II - 14 and II - 15 :

A comparative analysis indicate that in the cattle population, 69.47% were adult and 30.53% young stock, and among buffaloes 43.10% and 56.90% were adult and young respectively. Excluding poultry the block Panwari has a livestock population of 4.16% of the total livestock population of district Hamirpur. A comparison of the position of livestock population is presented in table II - 15.

Table II - 14 : Livestock Population by Male and Female  
Adult and Young Stock in Panwari (1977 Census)  
(In Number)

Category 1	Adult*			Young Stock 5	Total Stock 6
	Male 2	Female 3	Total 4		
1. Cattle	9779 (75.59)	3158 (24.41)	12937 (69.47)	5686 (30.53)	18623
2. Buffalo	92 (8.67)	969 (91.33)	1061 (43.10)	1401 (56.90)	2462
3. Sheep	-	-	1668 (69.82)	721 (30.18)	2389
4. Goat	-	-	7612 (60.67)	4934 (39.33)	12546
5. Horses and Mules	-	-	37 (92.50)	3 (7.50)	40
6. Pigs	-	-	-	-	724
7. Other animals (except poultry)	-	-	-	-	4919
8. Poultry birds	404 (29.38)	971 (70.62)	1375 (57.53)	1015 (42.47)	2390

\* Cattle and Buffalo of 3 years or more, sheep and goats of one year or more and poultry birds of 6 months or more.

Note : Figures in parentheses in columns 2 and 3 denote percentage to corresponding figures in column 4, and, in column 4 and 5 to corresponding figures in column 6.

Table II - 15 : Livestock Population in the Block and  
the District (1977)

Category	Panwari		Hamirpur	
	Number	Percentage	Number	Percentage
1. Cattle	18623	44.66	435616	43.42
2. Buffalo	2462	5.90	103118	10.29
3. Sheep	2389	5.73	43071	4.29
4. Goat	12546	30.08	244330	24.35
5. Horses and Mules	40	0.10	1119	0.11
6. Pigs	724	1.74	30305	3.02
7. Other animals (except poultry)	4919	11.79	145699	14.52
8. Poultry birds	2390	-	40744	-
Total (except poultry)	41703	100.00	1003258	100.00

It may be seen that the livestock population of the block constituted of a high percentage (44.66) of cattle and goats (30.08). At the district level percentage of both of these animals has been lower to the block. But, buffaloes have a higher population at the district level as this category represents 5.9% of the total livestock population in the block and 10.29% in the district.

The livestock population (Bullocks and male Buffaloes) per hectare of net area sown in the block comes to 3.82 as against 2.20 in the district. The livestock (cows and she-buffaloes) per capita of rural population in the block is 0.06 and 0.12 in the district. Besides low per capita milch cattle population, the quality of these cattle, mostly of local breed, is very poor. The average daily yield of milk per cow is reported to be hardly one litre, whereas the milk yield per she-buffaloe is less than two litres per day. The total adult poultry birds (hen) in the block were 971 and the annual production of eggs is quite meagre. The poultry farming has not made any progress in the block.

There is one veterinary hospital and one artificial insemination sub-centre at Panwari and two stockman centres (one at Panwari and the other at Mahob Kanth). Thus, only two villages have veterinary facilities i.e. Panwari and Mahob Kanth. There is neither a sheep and wool extension centre nor a pigery development centre in the block. At the district level there are only two and one such centres respectively. There are 18 pigery and 2 poultry units in which 33 and 4 persons are working respectively.



10. Fisheries : There is a good potential for fisheries development in Panwari block. An area of 309 hectare is under fisheries. During 1978-79 a total of 7200 fingerlings were distributed in the block. The total production in the year was 42.56 quintals. The per hectare production comes to 0.138 quintal against 0.103 quintal in the district. However, the stocking of fingerlings per hectare of water area under pisciculture was very low in the block as well as the district as their numbers were only 23.3 per hectare and 87.02 per hectare respectively.

Although, there are 4 Fishermen Cooperative Societies in the district yet there is no such society in the block. The block has good potentialities for development of fisheries and a serious effort should therefore be made to develop it on commercial lines.

11. Industries : There is no industrial unit in the organized sector in Panwari block. However, during the survey it was found that about 437 persons were engaged in 345 unregistered industrial units. These are very small units engaging only family labour. Among them the majority of (259) persons were engaged in basket making. Weaving of durries and blankets is another important industrial activity engaging 138 workers. About 40 persons were engaged in tanning of leather. There is one small tannery at Panwari but most of the tanners process hides on traditional basis at their residences. Thus, on an average 1.27 persons per unit were engaged in Panwari as against 1.99 persons per such unit in the district.

12. Power/Electricity : In Panwari 25 (23.58%) of the inhabited villages had the availability of electricity, according to a recent inquiry of the villages in the block. In the year 1979 the total number of electrified villages in the block was reported to be only 13, out of which only 2 used power for productive purposes.

The electrification has been done in the villages which are big in terms of area and population. These villages cover 27.41% of the area of the block. The electrified villages represent 39.68% of the families and 40.27% of population. An interesting feature of the electrified villages is that they contain 38.83% of the total population of Scheduled Castes in the block.

Considering that a significant number of artisans<sup>were</sup> engaged in basket making and weaving of durries/blankets in a number of villages, priority should be given for electrification of these villages, numbering seven, in the near future. These villages cover an area of 10.36% and a population of 11.01% of the block.

But, the most significant aspect of the facility of power in villages is that the beneficiaries invariably complain of shortage of power. Unless sufficient power supply is assured neither agriculture nor cottage industry can develop to the desired extent.

13. Communication : Road is an important infrastructure which helps people in at least three important ways : (a) by raising mobility of the people; (b) by augmenting economic activities in its adjoining areas; and (c) by encouraging social change through exposure of the population to the social organization



of other areas. The total length of pucca roads in the block was 39 kms. as against 712 kms. in the district. Besides, there were link roads totalling about 123 kms. The average length of pucca roads per thousand square kms. of area available in the block during 1978 was 72.6 kms. as compared to 99 kms. for the district. The average length of pucca roads per lakh of population of the block during 1978 was reported to be 47.6 kms. as against 61.5 kms. for the district. This indicate the block is backward even in its own district as far as the stock of pucca roads is concerned. The details of the existing pucca roads are presented in table II - 16.

Table II - 16 : Availability of Pucca Roads and Classification of Villages According to Their Distance

Particulars	Panwari	Hamirpur
A. <u>Length of Pucca Roads (Km.)</u>	39	712
Per thousand sq. km. of area	72.6	99.0
Per lakh of population	47.6	61.5
B. <u>Classification of Villages According to Their Distance From Pucca Roads (No.)</u>		
Within the Village	9 (8.49)	149 (16.02)
Less than 1 km.	6 (5.66)	36 ( 3.87)
Between 1 and 3 kms.	12 (11.32)	131 (14.09)
Between 3 and 5 kms.	20 (18.87)	161 (17.31)
5 kms. and above	59 (55.66)	453 (48.71)

Source : Statistical Bulletin, 1979, Office of the Economics and Statistics Officer, Hamirpur.

Note : Figures in parentheses denote percentage to total inhabited villages.

As indicated in table II - 16, only 9 out of 106 inhabited villages of the block were well connected with pucca roads and 6 villages were located at a distance of less than one km. from these roads. Thus, we can say that 15 (14.15%) of the villages had pucca road facility in the block as compared to 19.89% in the district. About 11.32% of the villages in the block were located at a distance of 1-3 kms. and 18.87% were located at distance of 3-5 kms. The majority of the villages in Panwari block (55.66%) were located at a distance of over five kilometers from pucca roads as against a lower proportion of 48.71% for the district. Thus, we find the roads facility in the block is quite inadequate.

There is one railway station at Pipri on Jhansi-Banda track. It is the border village of the block connecting Tehsil Mahoba of Hamirpur district and Madhya Pradesh. The block area is also served by two other railway stations, namely Kulpahar (Block Charkhari) and Harpalpur (Madhya Pradesh). Since there is only one railway station in the block, most of the villages (90) are located at a distance of 5 kms. or more from the station. Only 9 villages are located at a distance of 3 to 5 kms. and 6 villages 1 to 3 kms. from the railway station.

The block is connected with state highway 44, (from Maurani-pur, Madhya Pradesh, to block Charkhari) and state highway 21 (from Panwari to Orai). But, the number of bus stops in the block is only 8. Most of the villages i.e. 74 (69.8%) are located at a distance of 5 kms. or above from these stops. But, it is not peculiar for the block alone as 67.3% of villages in the district as well are located beyond 5 kms. from this facility.

During 1978 the number of post offices, with or without saving banks, was reported to be 16 in the block.\* Thus, most of the villages i.e. 69 (65.1%) have a distance of 3 kms. and above from a Post Office. Almost a similar percentage of villages (65.4) in the district have this facility at 3 kms. or more. There is only one Telegraph Office in the block, located at the village Panwari.

14. Education : There were 93 (77 for boys and 16 for girls) Junior Basic Schools, 10 (7 for boys and 3 for girls) Senior Basic Schools and 1 Higher Secondary School in the block. The district has 3 degree colleges but none in the block. A total of 10,717 students (boys 7555 and girls 3162) were enrolled at the school of three stages. The percentage of girls to total enrolment was, therefore, 29.5. The Scheduled Castes students in the three stages, namely lower primary, upper primary and higher secondary, were 2140 i.e. 19.97% (1916 boys and 224 girls). Thus, the Scheduled Castes boys constitutes of 25.36% of total boys and Scheduled Castes girls of 7.08% of total girls enrolled in these schools. Considering a ~~high~~ percentage of population of the Scheduled Castes in the block (31.4) enrolment of about 20% of their children in schools indicate the extent of their educational backwardness.

An analysis of spatial distribution of existing educational institutions in the block reveal that 70 villages had boys' Junior Basic Schools,+ 7 had boys' Senior Basic Schools and one had a

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\* According to latest information there are 14 Post Offices in the block.

+ According to the latest information there are 77 Schools in the block.

Higher Secondary School during 1978-79. Sixteen of the villages had Junior Basic and 3 Senior Basic Schools for girls. Among those villages which did not have a Junior Basic School for boys 8 had this facility within a distance of less than one kilometer, 13 in between 1 and 3 kms., 14 in between 3 and 5 kms., and 1 had beyond 5 kms. Out of the villages which did not have a Junior Basic School for girls 5 had a school within a kilometer, 15 had within 1 and 3 kms., 29 had this facility in between 3 and 5 kms. and 41 had at a distance of 5 kms. or more.

Since there were only 7 Senior Basic Schools for boys in the block 6 villages had a school within a km., 12 had in between 1 and 3 kms., 29 in between 3 and 5 kms., and 52 at a distance of 5 kms. or more. Out of the 103 villages which did not have a Senior Basic School for girls 9 had this facility at a distance of in between 1 and 3 kms., 26 in between 3 and 5 kms. and 68 in between 5 kms. and more.

Considering the above facts we find that boys of 15, 81 and 97 villages had to walk for over 3 kms. for attending a Junior Basic School, a Senior Basic School and Higher Secondary School respectively. The condition of girls' education is even worse as 70 villages had facilities for their education at Junior Basic level at a distance of over 3 kms. and 94 villages had facilities for Senior Basic education for them at a similar distance.

The literacy percentage in the block is low in comparison to the district. Of the total population 17.39% in the block were literate as against 20.25% in the district and 21.7% in the State. Literacy among females of the block was only 5.56% as

against 7.83% of the district and 10.55% of the State. Among males, 27.96% of population of the block was literate against 31.13% of the district and 31.5% in the State.

15. Medical and Health : The medical and health facilities in the block during 1978-79 include 1 primary health centre, 5 allopathic, 3 ayurvedic and 1 unani dispensaries and 4 mid-wife/trained Dai centres. In all, there were, therefore, 10 dispensaries including a primary health centre at the block headquarters. The number of villages having any kind of hospital/dispensary was 64 or 6.9% of the total villages in the district in that year. The number of villages having Mid-wife/trained Dai centres was 45 in the district.

As the number of hospitals/dispensaries in the block as well as the district is small, majority of the villages are at a distance of 5 kms. or more from these facilities. Out of 106 inhabited villages in the block and 930 in the district, the proportion of villages located at a distance of 5 kms. or more from a health centre, were : 80.2% for the block and 82.9% for the district from a primary health centre, 80.2% for the block and 84.5% for the district from an allopathic dispensary, 75.5% for the block and 84.5% for the district from an ayurvedic dispensary and 87.7% for the block and 94.8% for the district from an unani dispensary. Out of a total of 11 blocks in the district 10 had 4 mid-wife/trained Dai centres each and one block (Kurara) had 5 such centres.

16. Drinking Water : Although drinking water facilities are not sufficient in whole of Bundelkhand region, Panwari block is however better served with this facility. All the 106 inhabited villages were reported to be having the facility of drinking water wells



within the village. Further, the availability of water from the drinking water wells in all the villages of Panwari block was reported to be adequate throughout the year.

#### D. Review of On-going Programmes

In formulating proposals for development of an area it is necessary to examine the performance of various development programmes carried out in the area. This requires a review of physical progress made under different programmes. The review helps in highlighting the relevance, benefits, existing shortcomings and the potentialities of the various programmes.

For carrying-out qualitative assessment of all the important schemes which were under implementation in the block, efforts were made to collect relevant data pertaining to each of the schemes from the block office. Unfortunately, the secondary data could not be sufficiently available from the office of Panwari block as the records were not properly maintained. Even a number of VLWs of the block could not help us much as they themselves were not well informed about their own circles. In view of the limitations of data for various points of time present section is based on the available data, discussions with officials and field observations.

The programmes carried out in the block area were by and large confined to agriculture and allied sectors. Emphasis was laid on pursuation and follow-up action for augmenting the levels of fertilizer inputs through the so-called kharif and rabi campaigns on the one hand and providing credit mainly through cooperatives on the other. For developing irrigation infrastru-

cture, besides construction/revitalisation of wells and Bandhis credit facilities were available from Land Development Bank, State Bank of India and Allahabad Bank.

Other important programmes included soil testing, distribution of agricultural implements and seeds of high yielding varieties, animal husbandry and Integrated Rural Development.

1. Agriculture : According to the data available at the block office the achievements in respect of the area under important crops during 1977-78 exceeded the targets fixed for that year. The area covered under paddy exceeded the target by 7.3%, under jowar by 6.2% under arhar by 2.1% and that under wheat by 2.6%.

During 1978-79 the achieved coverage of area under paddy exceeded by 35.5% over the target fixed for this crop. The area under jowar exceeded by 5.5%, under arhar by 8.9% and under wheat by 4.6% over their respective targets. Against the targets fixed for 1979-80 the corresponding achievements exceeded by 8.5%, 0.1%, 10.1% and 19.6% of the targets for the above mentioned crops respectively.

A shift in the cropping pattern during the three years, i.e. 1977-78 to 1979-80 is also observed. For example, the area under paddy during 1978-79 declined to 67.3% of the area during 1977-78. Similarly, area under wheat declined by 1.9 per cent during 1977-79 but the area under jowar and arhar increased by 3.9% and 8.2% respectively. The area under paddy declined further during the next year i.e. 1979-80, (base year - 1977-78) and came down to 60.7% whereas area under jowar and arhar increased by 67 per cent and 6.3% respectively. Area under wheat which declined <sup>during</sup> the previous year increased during 1979-80 by 12.2 per cent.



The pattern indicate that the area under paddy is declining and under jowar, arhar and wheat increasing. Similarly, area under gram has also increased from 11198 in 1977-78 to 13249 ha. in 1979-80, i.e. an increase of 18.32% during the period of three years.

As to the commercial crops, there was an increase in the areas under sugarcane, soyabean and groundnut and a decrease in the area of potato. It is significant that the per hectare yield of potato is higher in the block even as compared to the average yield in U.P. Despite this, a decrease in area under potato crop does not seem convincing. However, the most interesting feature of different programmes is that there is no relationship between targets and achievements and in many a cases it seems to realistic assessment of the potential is made while formulating targets.

About 7 thousand hectare of land is, at present, lying unproductive in the shape of fallow and culturable waste in the block. It would be desirable to take up soil conservation programme with a view to bringing a larger area under cultivation particularly the area lying as culturable waste (2979 hectares).

During 1978-79 about 52 per cent and 69 per cent of the area under wheat and paddy was covered by HYV of these crops respectively. There is still need for popularising HYV of paddy and wheat. The data on the distribution of seeds of HYV of wheat and paddy present an interesting picture. The targets for the distribution of seeds of HYV of paddy during 1977-78, 1978-79 and 1979-80 were 44.16, 18 and 25.92 quintals. The figures of seeds actually distributed during the first two years were the same as the targets, but distribution

declined significantly from 1979-80 when only 15.06 quintals of seeds were distributed against the target of 25.92 quintals. The data pertaining to 1980-81 (upto November 15, 1980) shows that only 1.68 quintal of HYV seeds were distributed against a target of 15.36 quintals. The HYV seeds of wheat were distributed at par with target during 1977-78, 1978-79 but the distribution was short by 68.6% of the target during 1979-80.

2. Irrigation : The data on the coverage of irrigation in the block indicate that the area has increased by 28.25% in 1978-79 from the area in 1971. An analysis of the source-wise area under irrigation show that the area irrigated by masonry well has increased by 130 per cent and through canal by 19.4% during the same period. The data for the year 1971 was taken from the district census handbook for that year. The notable decline in irrigation through tanks from about 140 hectare in 1971 to only 6 hectare in 1978-79 with 6 existing tanks, indicate that the potentialities of this source have declined to the extent of 4.3% of that in the year 1971.

The progress of the Minor Irrigation Programme shows that during a period of four years from 1977-78 to 1980-81, 128 masonry wells were constructed against a target of 167 wells. During the same period 150 pumping sets and 1 private tubewell were installed against targets of 135 and 25 respectively, and Bandhis were constructed in 4236.75 hectare against a target of 3801.5 hectare.

According to the block records the irrigation potential had increased by 2723.9 hectare during the four years. The target for the same period was to increase irrigation potential through these sources by 2071.8 hectare. Thus, the achievements have exceeded

the targets. However, it may be pointed out that there is some discrepancy in the data e.g. in 1980-81, 21 masonry wells were constructed against a target of 40 wells, 11 pumping sets were installed against a target of 40 sets and Bandhis were constructed in 736.75 hectare against a target of 1200 hectares. The irrigation potential increased by 779.5 against a target of 420 hectares. Against this achievement, during 1979-80 43 against a target of 35 masonry wells were constructed, 66 pumping sets were installed against a target of 45, one tubewell was installed against a target of 5 and Bandhis were constructed in an area of 1441 hectare against a target of 800 hectare. The irrigation potential increased by 236.5 hectare against a target of 195 hectare. The achievements by way of creating irrigation potential during 1980-81 were lesser than those added during 1979-80 whereas the area brought under irrigation during 1980-81 was 185.6% of the area covered during 1979-80. It is, therefore, felt that the data is not reliable. However, the scheme is significant and should be carried out in the area on a large scale.

3. Animal Husbandry : The programme of animal husbandry in the block include veterinary services, castration of scrub bulls, artificial insemination, fodder seeds distribution and distribution of poultry birds.

According to the livestock position in 1977 there were 41703 animals (except poultry) in the block. During 1978-79 there were 18 piggery and 2 poultry units. Among a population 13998 adult cattle and buffaloes 4127 or 29.5% were female. The population of 9779 adult male cattle in the block i.e. 75.6% indicate their

use in agriculture on a large scale. The small population of adult milch cattle shows that dairying was not popular in the block and due to this there was no milk cooperative society.

The data on schemes such as artificial insemination, prophylactic inoculations, castration and poultry development could be obtained from the block headquarters for a period of three years, i.e. 1977-78, 1978-79 and 1979-80. During these three years, 641, 700 and 766 cattle were castrated against targets of 1800, 1000 and 1000 respectively. This shows that the achievements were to the extent only 35.6% in 1977-78 and 70% and 76.6% of targets during the latter two years respectively.

The programme of artificial insemination is of crucial importance for breed improvement. During the period of three years 129, 52 and 5 cows and 116, 66 and 35 she-buffaloes were inseminated against a target of 150 cows and an equal number of buffaloes for each of the three years. Thus, during 1977-78 about 82 per cent of the target covering 300 cows and she-buffaloes was achieved. The achievements declined substantially during the subsequent two years. Against the target of 300 animals in the years 1978-79 and 1979-80 each, only about 39 per cent and 13 per cent of animals were inseminated respectively.

The veterinary services in the block include vaccination of animals. The two types of prophylactic inoculations done in the block were HS and RP. The targets for HS inoculations for the three years were 7500, 8000 and 8000 respectively. Against these 4180 (55.7%), 3750 (46.9%) and 3320 (41.5%) of animals were inoculated. The targets for RP inoculations for these years were 8500, 3000 and 8000 respectively and the corresponding achievements

were 40.2%, 100% and 55%, respectively, of the targets.

According to livestock Census 1977 the total population of poultry birds in the block was 2390 (adult male 404, female 971 and young stock 1015). During 1978-79 there were 2 poultry units in the block in which 4 persons were engaged. According to the block records 450 poultry birds were distributed during 1977-78, 250 during 1978-79 and 100 in 1979-80. The target for each of the year was to distribute 1000 poultry birds. Thus, only 800 poultry birds were distributed during a period of three years, though the target was 3000. We, therefore, find only 26.7% of the poultry distribution target was achieved during the three years. The distribution of poultry birds shows a constant decline over the years, e.g. 45% of the target of 1000 birds were distributed during 1977-78. During 1978-79 and 1979-80 only 25% and 10% of the targets of 1000 for each of the two years were achieved. The gaps in the achievements, as indicated above, show lack of realistic planning for the area.

#### E. Constraints to Development

The analysis of preceding sections identify some constraints to development of Panwari block. They are :

1. The agricultural productivity of the block is low because of poor soil texture, low consumption of fertilizers and lack of sufficient irrigation facilities. A portion of the block is rocky and slopy. The soils and other conditions are relatively less favourable for agricultural development. Hence, the conditions call for very careful management of agriculture. A very low intensity of cropping (106.03) also indicate that lack of irri-



gation facilities is the major constraint to agricultural development restraining double cropping.

The scope for expansion of irrigation facilities at a large scale is limited. The hard and difficult strata of the soil limits the scope for construction of canals and installation of state and private tubewells. A majority of farmers who are under the category of small and marginal farmers, are financially weak and, therefore, not in a position to use inputs like fertilizers and pesticides to the required levels. The differences between targets and achievements with regard to distribution of fertilizers indicate the inefficacy of the institutions engaged in the task, apart from low income levels of the farmers.

2. There is enough scope for the development of animal husbandry and fisheries in the block. The stock of milch cattle, goats and sheeps appears to be sufficient in the block, but most of them are of local breed and are low yielding. The breeding programme and the fodder development programme have not succeeded in augmenting the productivity of the livestock. These programmes, therefore, need to be strengthened. Further, there is neither a sheep and wool extension centre nor a pigery development centre in the block. Poultry farming has not made any progress in the block and there is no effort to improve the situation. Little attention towards evolving area specific schemes thus also constrained the exploitation of the development potential.

There is good potential for fisheries development in the block. However, the stocking of fingerlings per hectare of water area under pisciculture is very low. This, together with delay

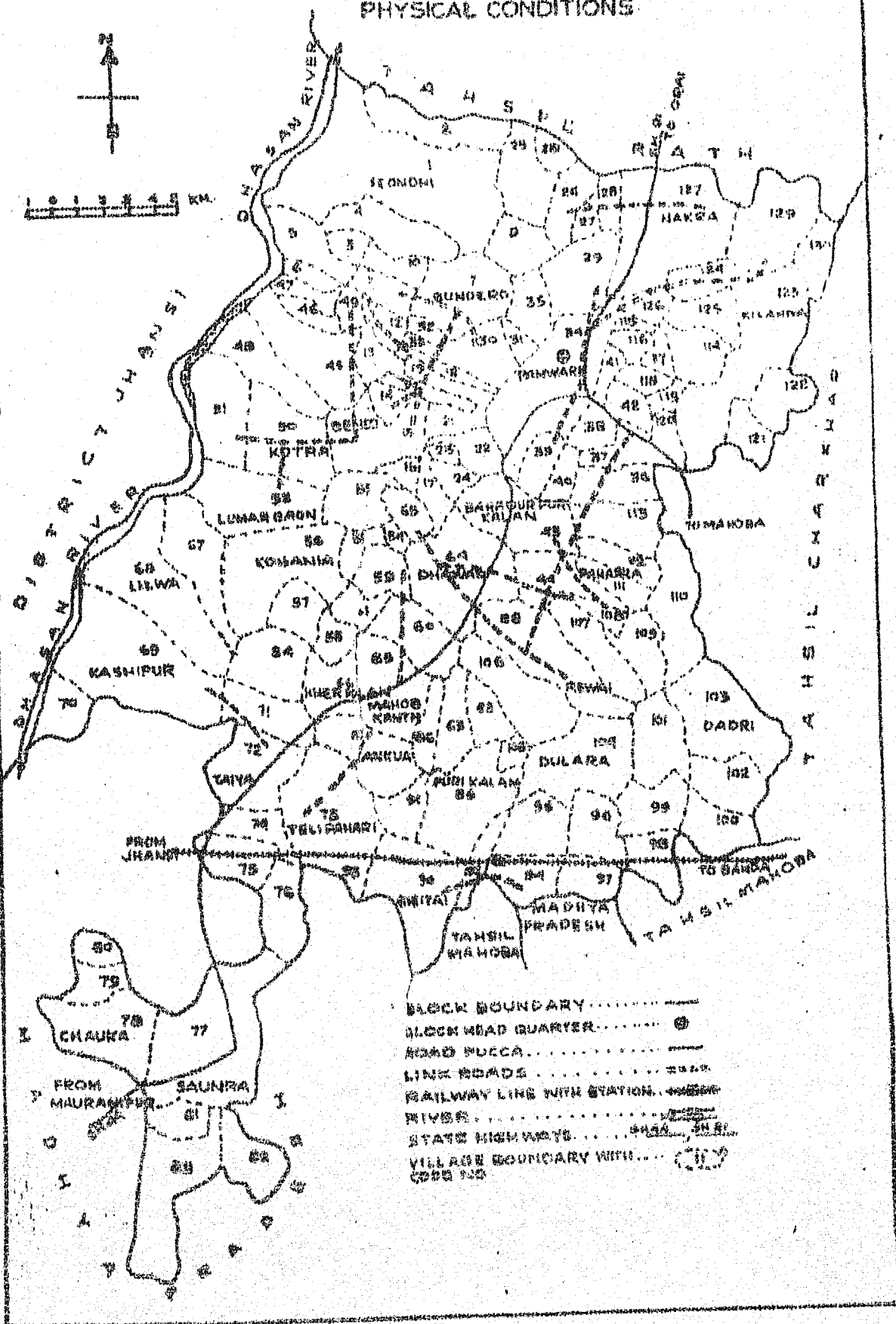
in distribution and stocking of fingerlings is stated to be the main cause of low production of fish. Thus, the department of fisheries has to streamline its own machinery for enhancing the production of fish.

3. The block lacks sufficient infrastructure crucial for development such as roads, transport, power and communications. It is, therefore, due to this deficiency that industrial activity is almost absent in the block. Although not much potentialities exist for any ambitious programme for industrial development, expansion of industrial activities based on local resources and skills is possible. But their proper development can take place only if facilities of roads, power and transport are developed.

4. Most of the existing programmes being implemented in the block seems to have not been drawn with due consideration of the needs and situational requirements of the people. Some other programmes are implemented half-heartedly in the sense that there has been communication gap between the officials of various departments and the target groups. This situation is indicative of lack of enthusiasm and commitment on the part of the persons involved in task of implementation, and hence of lack of peoples' participation in the development programmes.



FANWARI BLOCK-HAMIRPUR U.P.  
PHYSICAL CONDITIONS





### CHAPTER III

#### THE LONG TERM EMPLOYMENT PERSPECTIVE AND STRATEGY OF DEVELOPMENT

Planning for economic growth and redistribution is a process, for which a long term perspective is necessary. A significant change in socio-economic conditions of the people is possible by improving the conditions of the existing infrastructure and creating additional functions/facilities, and ensuring greater participation of the people in various developmental schemes/programmes, directed towards fulfilment of certain long term goals. This requires not only creation of additional functions/facilities but also a check on various constraints to development. This process has to be elaborate and continuous and, therefore, any perceptible changes in the levels of development can be visualised only through a long period, say 10-15 years. But plans for such a long period will face certain operational problems as there will be little scope for attention to current and immediate problems and certain programmes continuing for such a long period will lose attraction and become a routine affair.

For ensuring continuity in the process of development, certain long term goals are to be set taking into account the potentials and constraints of the area and the national objectives. With this objective, we formulate medium term five year plans, as also the annual plans. This is more operational as it helps in phasing of the various developmental activities which could serve the long term requirements and also cater to the problems of immediate concern.

Besides achieving economic growth, our national plans aim at reducing, as far as possible, unemployment and under-employment, which are the major causes of poverty and inequality. The problem of poverty is more acute in the rural areas where the segment of population living on labour earnings is hard pressed for want of jobs, particularly, during the lean agricultural months. The small/marginal farmers are no better a lot. The objective of the present plan of block Panwari is, therefore, to generate maximum possible employment opportunities in both the agricultural and non-agricultural sectors. This will be possible through proper exploitation of resources, physical, material and human, available in the area. The exercise in this chapter include projections of the changes in employment and unemployment situation through integrated area development over a period of 15 years.

In the following sections the long term employment perspective and the long term strategy of development have been broadly indicated. The magnitudes of the changes in the employment and unemployment situations in the block during the proposed five year plan period have been worked out on the basis of the envisaged growth in various activities, which are described in chapter V. This formed the basis for the long term projections incorporated in the present chapter.

### 3.1 Existing Situation and the Long Term (15 years) Perspective of Employment

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One of the major goals of national planning is to bring about qualitative improvement in the life of the rural masses. This is possible only by providing them gainful work for the whole year since a majority of even among the so-called employed are able to

get employment only for a part of year. Thus, efforts have been made under this plan that the employment opportunities are so created as could benefit the unemployed and inadequately employed in the block, by ensuring that maximum possible opportunities fall within the range of options available to them.

The annual growth rate of population in Panwari block is about 2.08. It is assumed that the population is likely to increase at the same rate of growth in the near future. On this basis, the estimates of population at the base year and the projections for the future years have been worked out for use in this chapter.

The total population of the block is, at present, estimated at 90808, with labour force at 36.62% or 33254. However, only 11.93% of the labour force is estimated to be adequately employed, while the unemployed are just 1.91%. The inadequately employed, thus, constitute as much as 86.16% of the labour force in the block.\* The estimated numbers of adequately employed, inadequately employed and unemployed persons in the base year are 3967, 28652 and 635 respectively. The total annual backlog of unemployment in the base year works out to 7511 persons - years.

If additional efforts are not made to reduce unemployment the backlog is expected to rise from 7511 in the base year to around 9000 in 1990-91 and to the tune of 10000 in 1995-96. With

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\*Those employed for at least 9 months in a year have been considered as adequately employed. Those employed for a period between 2 months and less than 9 months, and, for less than 2 months in year have been considered as inadequately employed and unemployed respectively.



concerted efforts to development, following the integrated area development approach, it is deemed that additional employment opportunities of the order of 17000 man-years would be created in the block during a period of 15 years. This would not only reduce the incidence of unemployment but would also increase the proportion of adequately employed persons in the labour force.

The estimates of employment and unemployment over a period of 15 years indicate that the backlog of unemployment would reduce from 7511 in the base year to 6043 man-years in 1995-96. During the same period number of inadequately employed persons would decrease from 28652 to 23051. Thus, only about 52 per cent of the labour force would remain inadequately employed by 1995-96 as compared to 86 per cent in the base year. The percentage of the adequately employed persons in the block is likely to increase from 11.93 in the base year to 47.35 in 1995-96. The existing and projected situations of employment and unemployment over a period of 15 years are presented in table III - 1.

Table III - 1 : Estimated Magnitudes of Employment, Unemployment and Their Long-Term Projections

Description	Base year 1980-81	1985-86	1990-91	1995-96
1. Population (No.)	90808	100259	110694	122215
2. Labour Force (No.) LFPR = 36.62%	33254	36715	40536	44755
3. Adequately Employed (No.)	3967 (11.93)	9709 (26.44)	15451 (38.12)	21193 (47.35)
4. Inadequately Employed (No.)	28652 (86.16)	26420 (71.96)	24541 (60.54)	23051 (51.51)
5. Chronically Unemployed (No.)	635 (1.91)	586 (1.60)	544 (1.34)	511 (1.14)
6. Additional employment generated during preceeding five years (man-years)	-	5742	5742	5742
7. Backlog of unemployment (man-years)	7511	6927	6434	6043

Note : The figures in parentheses show percentages to the corresponding labour force estimates.



Various programmes for the Panwari block have been proposed in chapter V. As a result additional employment is likely to be generated by the implementation of these programmes under the present integrated area development plan. The estimates in table III - 2 shows that the agriculture is likely to generate the maximum employment (58.64%) followed by the soil conservation programme (16.75%), construction of roads (10.95%), establishment of industries (7.35%) and animal husbandry (3.66%).

Table III - 2 : Sector-wise Estimates of Additional Employment\*

Sector	Persons likely to get employment	
	Number	Percentage
1. Agriculture	3367	58.64
2. Soil Conservation	962	16.75
3. Minor Irrigation	5	0.09
4. Animal husbandry	210	3.66
5. Cooperatives	7	0.12
6. Roads	629	10.95
7. Industries	422	7.35
8. Power	11	0.19
9. Education	100	1.74
10. Medical and Health	29	0.51
Total	5742	100.00

\* Scheme-wise details of additional employment likely to be generated during the Plan period are presented in Annexure 2.

### 3.2 The Strategy

The long term strategy is based on the potentials and resources that can be mobilised in the area. The strategy to be broadly followed over a long period would centre around : (a) generation of additional employment opportunities and improvement in socio-economic conditions of the population; (b) exploitation of the local resources to the maximum possible extent to achieve economic growth; and (c) development of the area by improving the existing states of agriculture and industries by adding suitable institutions/services/schemes, and development of the infrastructure that could help in bringing about a positive change in the socio-economic conditions of the people in the area. The present Plan of the block has been prepared within this broad framework. While selecting the programmes for the Plan, preference has been given to those programmes which have, as far as possible, the potential of generating employment opportunities in the area.

The strategies of sectoral development have been formulated taking into consideration the existing conditions with regard to development potentials, the constraints to development and experience from the on-going schemes. The details of the strategy for sectoral development are as follows :

#### 1. Agricultural Development

The capacity of the primary sector, mainly agriculture, in absorbing labour is much higher as compared to secondary and tertiary sectors, and, therefore, it receives the highest priority in the Plan. The efforts will be to increase the area under cultivation and agricultural productivity on cultivated lands.

About half of the area under cultivable waste will be developed and brought under cultivation. The productivity of the existing agricultural land will be augmented by bringing more area under high yielding/improved varieties and commercial crops, for which supply of inputs will be raised. The cropping intensity will also be increased by about 4 per cent. Efforts will be made to improve agricultural practices through extension work. Demonstrations will be carried out to educate the cultivators about the gains of HYV/IV cropping. At the same time, development of irrigation facilities and timely supply of the required inputs would be ensured. Because of poor quality of animal power mechanisation of agricultural operations, particularly ploughing would be desirable. Since wear and tear of agricultural implements is more frequent in the area, facilities for repairing of implements in the block would be very helpful to the farmers. Agricultural implements repairing shops will, therefore, be located at a few central places. Mini Agro-Service Centres will also be located at a few important central places for catering to the requirements of the cultivators. To ensure timely supply of agricultural inputs agricultural seed stores will be established at suitable locations.

Development of irrigation is slightly difficult in the area. The deep boring attempted so far in the region did not fructify because of rock bound surface and, that is why, there are no state tubewells in the block. Since the extension of canals is not possible in the near future, the options for development of irrigation in the area are limited. This calls for construction of more masonry wells and revitalisation of the existing ceased wells. This source would be strengthened by installing pumping sets and Persian wheels.

## 2. Animal Husbandry

The quality of the livestock in the block is generally poor because of adverse climatic conditions, lack of sufficient availability of green fodder and inadequate health cover. It is due to this that the milk yield is very low. Efforts will, therefore, be made to improve the quality of the existing cows and buffaloes by providing sufficient health cover and increasing the production of nutritive green fodder.

To generate employment opportunities and supplement income of marginal farmers and agricultural labourers efforts will be made to encourage dairying in the area and local improved breeds of she-buffaloes will be distributed in inadequate numbers.

Another activity, namely goat rearing has potential in the block. It is popular among the poorer sections of the population. The activity will be encouraged by distributing goats in the block. Adequate health cover will be ensured to reduce the risks of the rearers and their economic conditions will be improved.

Although poultry farming has kept from developing on commercial lines in the block, yet there is scope for it. Efforts will, therefore, be made to encourage this activity on commercial lines.

## 3. Industrial Development

The block has not developed industrially because of lack of sufficient infrastructural facilities such as power, road and transport apart from income and demand constraints. The present framework of development and the available potentials however do not suggest establishment of large scale units in the block. But

there appears to be considerable scope for setting up small industrial units in the area, where emphasis will, however, be on the maximum possible exploitation of local resources, skills and raw materials. Encouragement will also be given to cottage industries which have sufficient employment potentials and have demand in the area. The infrastructural gaps, such as road and power will be filled simultaneously.

#### 4. Road and Power

Roads and electricity are the basic requirements for socio-economic development. Roads are necessary to ensure proper supply of inputs and transportation of agricultural surpluses to the market centres. Both these facilities are important for the improvement of socio-economic conditions of the people.

Since the facilities at the selected central places have their own importance in growth and diversification of activities in the area, all the central places which do not have road connections and LT mains, will<sup>be</sup> provided with these facilities during the plan period. Moreover, since electricity is both a utility for production and an item of consumption, efforts will be made to electrify certain villages, other than the central places, which would fall along the power lines being extended to the central places.

#### 5. Education and Health

Education plays a significant role in the overall development of an area by bringing in some attitudinal changes, as it exposes the people to new ideas and new way of life. The facilities for education at junior basic level are, at present sufficient, but



there are a few selected central places which do not have facilities for education at senior basic level, which will have to be provided. Facilities for higher secondary level education are not sufficient, whereas for degree level, there is no facility in the block. These will be provided.

The number of existing health care institutions is inadequate taking into account the geographical spread of the block area. Some health care facilities will have to be provided at the selected central places, wherever they do not exist. In this connection, some maternity and child welfare centres. and dispensaries will be established in the block.

It is difficult to determine the magnitudes of long-term changes implied in the strategy of development, because, as already stated earlier, the present exercise relates to working out requisite details for the operational plan stretching over five years, and that the bench-mark situation for a subsequent five-year plan may be different from what it is today. But the directions in which the developmental efforts have to be made over a 15 year period are likely to be the same as described above. As to the magnitudes of changes in the key and policy variables for the five year period, they have been described in a sectoral framework in the chapter V.



## CHAPTER IV

### INTEGRATED AREA DEVELOPMENT AND IDENTIFICATION OF CENTRAL PLACES

#### 1. The Concept

Upto Third Five Year Plan emphasis was laid on strategies and proposals for sectoral development. The sectoral development plans were prepared at the aggregative level and, therefore, little attention was paid on appropriate dispersal of facilities and functions, necessary for increasing the pace of development of a region. The concept of 'integrated area development' or the micro level planning was introduced during the Fourth Plan. It implies comprehensive planning for socio-economic development of a region or sub-region by using efficiently the available local resources and skills. The micro level planning attempts the coordinated expansion of different socio-economic services required for overall development of an area. It also tries to ensure closer linkages between central places of different status, i.e. growth centre, service centre and central village.

A question arises as to what is the rationale behind the hierarchy of central places. The fact that planning for development of smaller units, in terms of size, can be more realistically and effectively evolved is now well realised as these units/places are more homogeneous in terms of natural endowments, levels of development and behaviour, attitudes and aspirations of the people. However, the limitations of resources does not permit provision of all types of functions/facilities in a small settlement. At the same time the functions/facilities may not be sustained only by the population of one particular settlement but also by the

population of adjoining settlements which too uses them. For planned development, a village as a unit of planning, therefore, does not appear to be feasible within the framework of 'integrated area development'. The concept of central places is, therefore, based on the assumption that every individual village cannot be a viable economic unit for the purpose of planning.

In the above background it has been considered feasible to provide a certain kinds of facilities at a place which could cater to a group of villages. Such places, referred to as central places, serve as centres of convergence as well as of diffusion. If these places are better served with infrastructural facilities, they can provide greater opportunities of employment and trade, and can also attract labour and entrepreneurs from the peripheral areas. The availability of functions/facilities at the central places will also generate growth impulses in their zones of influence. The public investments for developing 'service' functions at central places is, therefore, likely to produce a multiplier effect on their zones of influence and accelerate the pace of development of the area.

The overwhelming importance of the central places in the context of integrated area development planning poses two important questions. They are : (a) which would be the appropriate set of functions for a central place, and (b) how the central places can be located and their hierarchy decided? These questions are related to the methodology that may be applied in selecting central places and determining the appropriate functions for them. The methodology has been discussed in the following paragraphs.

## 2. Methodology

There are three methods which are usually adopted for identification of central places. They are : (a) scalogram analysis, (b) population threshold, and (c) ranking of central places on the basis of functional hierarchy. The scalogram analysis is based on a scale developed by L. Guttman and the method of ranking settlements on the basis of population threshold has been used by Berry and Carriseion. The ranking of settlements on the basis of hierarchy of functions is based on the operational characteristics of the central place theory.

The Scalogram method has one major problem that with the use of this method, sometime it becomes difficult to identify functional gaps at particular locations. This may happen in the case where higher order functions are found located in a lower order settlement, and some higher order functions are not available in higher order central places. Such a situation creates problem in recommending provision of the missing functions for bridging the gaps.

The ranking of settlements on the basis of the median population threshold also suffers from one basic limitation. The median population threshold indicate the minimum population required for sustenance of a particular function, but it is not merely a minimum size of population of a settlement that determines the necessity and feasibility of certain kinds of functions/facilities for that settlement. The feasibility of functions/facilities at a place also depends on the requirements of the population of adjoining settlements. Hence it becomes difficult to ascertain as to whether the median population threshold obtained through this method is the real population size required to sustain a function/facility.

In view of the above observations, we have adopted the third method i.e. ranking of settlements on the basis of functional hierarchy. Under this method, it is possible to determine the hierarchy of central places either through median population threshold or through working out centrality score by assigning weights to functions based on their frequency. Since we have already pointed out the shortcomings of the population threshold method we have discarded it and have ranked the settlements on the basis of centrality scores.

Under the method of ranking of central places on the basis of functional hierarchy, each function/facility was assigned a weight. The weight was obtained by dividing the total number of settlements in the block by the total number of existing functions. This may be explained by the following example :

There are 106 settlements in the block with 77 Junior Basic Schools, 7 Senior Basic Schools and 1 Higher Secondary School, the weights for these functions will work out as 1, 15 and 106 respectively. Then, the number of each of the functions were listed against each of the settlements of the block and multiplied by their respective weights. The total, thus, arrived was centrality score.

After the centrality scores were computed for all the settlements, in a depending order of centrality scores. Having ranked the settlements, the settlements were ranked/the settlements, the cut-off points were located for identifying the hierarchy of central places. These places were termed as growth centre, service centre and central villages according to their importance in terms of hierarchy.

With a view to identifying central places efforts were made to collect village-wise data/information regarding the availability of 35 functions/facilities of different orders (lower, middle and higher). The data was collected directly from the Village Level Workers of the block. It, therefore, represent the current status of the block in terms of the functions/facilities available there. Obviously, this set of data is different from that used for comparing the levels of development between block Panwari and district Hamirpur. The functions and facilities for which the relevant informations were sought from the field are listed below in table IV - 1.

Table IV - 1 : List of Functions and Facilities

Lower Order Functions	Middle Order Functions	Higher Order Functions
1. Primary school	18. Agricultural Imple-	31. Telegraph Office
2. Post Office	ments Repairing	32. Cold Storage
3. Private Medical	shop	33. Regulated Market
Practitioner	19. Veterinary Hospital	34. Cinema Hall
4. Electricity	20. A.I. Centre	35. Degree College
5. Multi-purpose Coop-	21. Higher Secondary	
erative Society	School	
6. Pucca Road	22. Commercial Bank	
7. Controlled Cloth	23. Family Welfare Cen-	
Shop	tre	
8. Junior High School	24. Primary Health Cen-	
9. Bi-Weekly Market	tre	
10. Seed Distribution	25. Railway Station	
Centre	26. Hospital	
11. Stockman Centre	27. Fertilizer and Pes-	
12. Bus Stop	ticides Distribution	
13. A.I. Sub-Centre	Centre	
14. M.C.W. Centre	28. Cooperative Bank	
15. Dispensary	29. Police Station	
16. Police Outpost	30. Post Office with	
17. Chemist & Druggist	Telephone	
Shop		



As stated earlier weights were assigned to each of the functions/facilities which enabled us to establish hierarchy of settlements with the help of centrality scores. A list of these functions/facilities and the weights assigned to them is given below :

Table IV - 2 : Functions and Their Weights

Functions	Weights
1. Primary School	1
2. Post Office	8
3. Private Medical Practitioner	3
4. Electricity	5
5. Multi-purpose Cooperative Society	4
6. Pucca Road	18
7. Controlled Cloth Shop	27
8. Junior High School	15
9. Bi-Weekly Market	9
10. Seed Distribution Centre	27
11. Stockman Centre	35
12. Bus Stop	27
13. S.I. Sub-Centre	106
14. Maternity and Child Welfare Centre	15
15. Police Outpost	53
16. Veterinary Hospital	106
17. Higher Secondary School	106
18. Commercial Bank	106
19. Family Welfare Centre	27
20. Primary Health Centre	106
21. Railway Station	106
22. Dispensary	18
23. Fertilizer and Pesticides Distribution Centre	35
24. Police Station	53
25. Post Office with Telephone	106
26. A.I. Centre	106
27. Cooperative Bank	106
28. Telegraph Office	106
29. Regulated Market	106
30. Chemist and Druggist Shop	35
31. Agricultural Implements Repairing Shop	106
32. Hospital	35

The question of assigning weights to the remaining three functions (i.e. Cold Storage, Cinema Hall and Degree College) does not arise as they were not existing in the block.



### 3. The Settlement Pattern

There are 106 inhabited villages in block Panwari. There is considerable amount of variation in population size from one village to another. There were some villages having a population of less than 50 persons each and a few have a population of over 2000 persons.

The distribution of villages by population size show that 74.5% of the villages had a population of less than 1000 persons. The proportion of small villages having a population of less than 200 persons each, was 22.6%. About 27 per cent of the settlements had population in between 200 - 499; 24.5% in between 500 - 999; and 25.5% above 1000 persons. The biggest village of the block is Panwari, which is also block headquarter, with a population of 6163 persons (Census 1971).

### 4. Central Places

It is normally expected that the quantity and quality of functions/facilities available in a settlement have a positive relationship with population size of the settlement. However, exceptions are there due to endowment conditions, overall profiles of the economy and society, and locational characteristics which play a significant role in this matter. The relationship between population size and the availability of functions/facilities (shown as centrality score) is evident in the case of only a few settlements appearing as central places. The table IV - 3 indicating this relationship is presented below :

Table IV - 3 : List of Settlements Appearing As Central Places Alongwith Their Current Population Estimates and Centrality Scores

Settlements	Population	Centrality Scores
1. Panwari	7724	1669
2. Mahoba Kanth	1249	524
3. Bendo	2213	140
4. Kan Kuan	1814	136
5. Ghutai	1258	119
6. Kilhauwa	2669	108
7. Nakra	2345	81
8. Taiya	1906	80
9. Khera Kalan	533	78
10. Kohania	1269	76
11. Paharia	918	76
12. Chhatesar	299	51
13. Ruri Kalan	1585	31
14. Alipura	214	31
15. Dulara	1406	24
16. Raimal Pura	27	23
17. Saunra	1737	22

The centrality scores presented in the discending order in the above table indicate that population size is not the most important factor in the availability of functions. A significant point that is to be mentioned here is that out of 17 villages appearing as central places 10 are connected with pucca roads. One village has railway station and another settlement is close to it. Among the rest of the five villages, Kilhauwa is the second largest village in terms of size; Bendo and Dulara has a population of 2213 and 1406 persons respectively.

In the following table (IV - 4) we present some of the significant characteristics of the settlements appearing as central

Central Places	Area (Hectare)	No. of Families	Population		Sched- uled Castes	Lite- rates	Workers (Total)		
			Total	Male			Female	Total	Male
1. Panwari	1138	1045	6163	3254	2905	1806	1804	1583	221
2. Mahoba Kanth	832	190	1115	585	530	359	322	287	35
3. Bendo	1120	335	1895	969	926	511	534	508	26
4. Kan Kuan	539	315	1628	869	759	640	597	464	133
5. Ghutai	1007	225	1134	573	561	566	561	337	224
6. Kilhauwa	939	440	2349	1243	1106	768	845	649	196
7. Nakra	1569	338	1939	1081	931	567	629	550	79
8. Taiya	677	288	1456	769	687	719	569	414	155
9. Khera Kalan	399	79	439	240	199	86	106	104	2
10. Kohania	876	194	1123	589	534	338	379	348	31
11. Paharia	244	154	898	468	430	274	287	221	66
12. Chhatesar	209	52	238	125	113	125	66	62	4
13. Ruri Kalan	1196	280	1467	779	688	551	563	427	136
14. Alipura	103	32	158	89	69	30	52	45	7
15. Dulara	860	255	1315	697	618	382	464	378	86
16. Raimal Pura	79	4	11	8	3	0	5	5	0
17. Saunra	1225	307	1619	869	750	697	632	468	164

places. This will enable us to have an idea of the background of these places. These characteristics, based on Census 1971, include their area, number of families residing there, their total population and the population of the scheduled castes, the number of literates in them and the population of workers.

On the basis of the centrality scores, we find a considerable difference between Panwari (1669) and Mahoba Kant (524) and between Mahoba Kanth and Bendo (140). The next and below settlements do not have so much of difference from one another. Accordingly, we have selected Panwari as the growth centre, Mahoba Kanth as service centre and eight other settlements as central villages. The names of the finally selected central places are given in table IV - 5.

Table IV - 5 : List of Finally Selected Central Places

Growth Centre	Service Centre	Central Villages
Panwari (34)	Mahoba Kanth (85)	1. Bendo (15)
		2. Ghutai (90)
		3. Kilhauwa (123)
		4. Taiya (72)
		5. Kohania (56)
		6. Paharia (111)
		7. Dulara (104)
		8. Saunra (77)

Note : a) Figures in parentheses denote location codes of villages.

b) Locations of the settlements identified as central places are shown in map No.3.

The selection of the eight central villages (Table IV - 5) from amongst the 15 settlements appearing as central places (Table IV - 3) was done on the consideration of having a suitable spread of the places in different sub-areas of the block. Thus except Bendo, all the rest of the 7 central villages were not selected on the basis of their highest centrality scores. The reasons in deleting 7 villages from amongst the list of 17 villages (Table IV - 3) were :

- |                |   |
|----------------|---|
| 1. Kankuan     | adjoining Mahoba Kanth (Service Centre)                                   |
| 2. Nakra       | adjoining Panwari (Growth Centre) and close to Kilhauwa (Central Village) |
| 3. Khara Kalan | adjoining Mahoba Kanth  |
| 4. Chhatesar   | close to Panwari  |
| 5. Ruri Kalan  | adjoining Ghutai and Dulara (Central Village)                             |
| 6. Alipura     | adjoining Panwari   |
| 7. Raimalpura  | close to Panwari and Kilhauwa   |

This method of selection of central villages would help in percolating benefits of planned development to all the areas of the block.

##### 5. Functions and Facilities at the Central Places

As stated earlier the hierarchy of settlements was decided on the basis of availability of certain functions/facilities. It was assumed that a lower order settlement should normally have all the lower order functions (Table IV - 1). In case any function was missing, for whatever reasons, its provision will strengthen the functional as well as spatial linkages and fill the functional gap. Similarly, if a higher order settlement does not have a



higher order function the provision of that function in the settlement would foster the process of development. In envisaging functions and facilities the necessity or otherwise of particular facilities for a settlement, based on other considerations, was also taken into account.

#### 5 a. Existing Functions and Facilities

Information with regard to existence of the 35 functions/facilities (Table IV - 1) in all the 106 inhabited villages of the block was collected from VLWs of all the 10 circles.\* Thus, the data presented in Table IV - 6 is based on the current information from the block. The list of available functions/facilities in the selected growth centre, service centre and the central villages indicate the hierarchy of these settlements.

Table IV - 6 : Existing Functions/Facilities in the Finally Selected Central Places

Central Place	Existing Functions
<u>A. Growth Centre</u>	
Panwari	Primary school, post office, private medical practitioner, electricity, multi-purpose cooperative society, pucca road, controlled cloth shop, junior high school, bi-weekly market, seed distribution centre, stockman centre, bus stop, A.I. sub-centre, maternity and child welfare centre, dispensary, police outpost, chemist and druggist shop, agricultural implements repair shop, veterinary hospital, higher secondary school, commercial bank, family welfare centre, primary health centre, hospital, fertilizer and pesticides distribution centre, cooperative bank, police station, post office with telephone, telegraph office, regulated market.

\* Existing functions/facilities in all the inhabited villages of the block are listed in Annexure 1.



Table IV - 6 (contd.)

Central Place	Existing Functions
<b>B. <u>Service Centre</u></b>	
Mahoba Kanth	Primary school, private medical practitioner, electricity, multi-purpose cooperative society, pucca road, controlled cloth shop, junior high school, bi-weekly market, seed distribution centre, stockman centre, bus stop, maternity and child welfare centre, dispensary, post office with telephone, family welfare centre, fertilizer and pesticides distribution centre, police station.
<b>C. <u>Central Villages</u></b>	
1. Bendo	Primary school, post office, private medical practitioner, electricity, multi-purpose cooperative society, controlled cloth shop, junior high school, bi-weekly market, seed distribution centre, stockman centre, maternity and child welfare centre.
2. Ghutai	Primary school, private medical practitioner, bi-weekly market.
3. Kilhauwa	Primary school, post office, private medical practitioner, electricity, multi-purpose cooperative society, pucca road, junior high school, bi-weekly market, dispensary, family welfare centre.
4. Taiya	Primary school, private medical practitioner, electricity, multi-purpose cooperative society, pucca road, junior high school, seed distribution centre.
5. Kohania	Primary school, post office, private medical practitioner, multi-purpose cooperative society, maternity and child welfare centre, dispensary, family welfare centre.
6. Paharia	Primary school, post office, private medical practitioner, multi-purpose cooperative society, junior high school, bi-weekly market, maternity and child welfare centre, dispensary.

Table IV - 6 (contd.)

Central Place	Existing Functions
7. Dulara	Primary school, post office, multi-purpose cooperative society, junior high school.
8. Saunra	Primary school, private medical practitioner, pucca road.

#### 5 b. Functions/Facilities required at the Central Places

A comparison of different order functions/facilities listed in table IV - 1 with the existing functions given in table IV - 6 indicate some functional gaps in the selected central places. The gaps are existing in the central places of all hierarchies i.e. growth centre, service centre and central villages. The village Panwari, proposed as a growth centre, lack three higher order functions/facilities; Mahoba Kanth, proposed as service centre, is missing 5 middle order functions/facilities. Among the proposed central villages, Bendo is lacking 6, Ghutai 14, Kilhauwa 8, Taiya 10, Kohania 11, Paharia 9, Dulara 13 and Saunra 14 lower order functions/facilities considered necessary for lower order central places. However, 3 of the lower order central places, i.e. central villages, have one higher order functions/facility each.

While proposing functions/facilities for the central places for filling functional gaps care was, however, taken that such functions/facilities should normally be not included in the list which were available in the adjoining villages and were, therefore, in the easy reach of the people of the central place and its periphery. For example, there is no post office in Ghutai and

Taiya villages but they have not been proposed for these villages as the facility is available in the adjoining Ruri Kalan and Kan Kuan villages respectively. Thus, the local needs were also considered while finalizing the list of proposed functions for the central places. The table IV - 7 lists the proposed functions/facilities for the selected central places :

Table IV - 7 : Proposed Functions of Central Places

Central Place	Proposed Functions
<u>A. Growth Centre</u>	
Panwari (34)	<ol style="list-style-type: none"> <li>1. Mini Agro-Service Centre</li> <li>2. Cold Storage</li> <li>3. Cinema Hall</li> <li>4. Degree College</li> </ol>
<u>B. Service Centre</u>	
Mahoba Kanth (85)	<ol style="list-style-type: none"> <li>1. Mini Agro-Service Centre</li> <li>2. Agricultural Implements Repairing Shop</li> <li>3. Artificial Insemination Centre</li> <li>4. Higher Secondary School</li> <li>5. Commercial Bank</li> <li>6. Cooperative Bank</li> <li>7. Primary Health Centre</li> <li>8. Chemist and Druggist Shop</li> </ol>
<u>C. Central Villages</u>	
1. Bendo (15)	<ol style="list-style-type: none"> <li>1. Mini Agro-Service Centre</li> <li>2. Pucca Road</li> <li>3. Bus Stop</li> <li>4. A.I. Sub-Centre</li> <li>5. Dispensary</li> <li>6. Police Outpost</li> <li>7. Chemist and Druggist Shop</li> </ol>
2. Ghutai (90)	<ol style="list-style-type: none"> <li>1. Electricity</li> <li>2. Multipurpose Cooperative Society</li> <li>3. Pucca Road</li> <li>4. Controlled Cloth Shop</li> <li>5. Junior High School</li> <li>6. Seed Distribution Centre</li> <li>7. Stockman Centre</li> </ol>

Table IV - 7 (contd.)

Central Place	Proposed Functions
	8. Bus Stop 9. A.I. Sub-Centre 10. Maternity and Child Welfare Centre 11. Dispensary 12. Police Outpost 13. Chemist and Druggist Shop
3. Kilhauwa (123)	1. Controlled Cloth Shop 2. Seed Distribution Centre 3. Stockman Centre 4. Bus Stop 5. A.I. Sub-Centre 6. Police Outpost 7. Chemist and Druggist Shop
4. Taiya (72)	1. Controlled Cloth Shop 2. Bi-Weekly Market 3. Stockman Centre 4. Bus Stop 5. A.I. Sub-Centre 6. Maternity and Child Welfare Centre 7. Dispensary 8. Police Outpost 9. Chemist and Druggist Shop
5. Kohania (56)	1. Electricity 2. Pucca Road 3. Controlled Cloth Shop 4. Junior High School 5. Bi-Weekly Market 6. Seed Distribution Centre 7. Stockman Centre 8. Bus Stop 9. A.I. Sub-Centre 10. Police Outpost 11. Chemist and Druggist Shop
6. Paharia (111)	1. Electricity 2. Pucca Road 3. Controlled Cloth Shop 4. Seed Distribution Centre 5. Stockman Centre 6. Bus Stop 7. A.I. Sub-Centre 8. Police Outpost 9. Chemist and Druggist Shop

Table IV - 7 (contd.)

Central Place	Proposed Functions
7. Dulara (104)	<ol style="list-style-type: none"> <li>1. Private Medical Practitioner</li> <li>2. Electricity</li> <li>3. Pucca Road</li> <li>4. Controlled Cloth Shop</li> <li>5. Bi-Weekly Market</li> <li>6. Seed Distribution Centre</li> <li>7. Stockman Centre</li> <li>8. Bus Stop</li> <li>9. A.I. Sub-Centre</li> <li>10. Maternity and Child Welfare Centre</li> <li>11. Dispensary</li> <li>12. Police Outpost</li> <li>13. Chemist and Druggist Shop</li> </ol>
8. Saunra (77)	<ol style="list-style-type: none"> <li>1. Post Office</li> <li>2. Electricity</li> <li>3. Multi-Purpose Cooperative Society</li> <li>4. Controlled Cloth Shop</li> <li>5. Junior High School</li> <li>6. Bi-Weekly Market</li> <li>7. Seed Distribution Centre</li> <li>8. Stockman Centre</li> <li>9. Bus Stop</li> <li>10. A.I. Sub-Centre</li> <li>11. Maternity and Child Welfare Centre</li> <li>12. Dispensary</li> <li>13. Police Outpost</li> <li>14. Chemist and Druggist Shop</li> </ol>

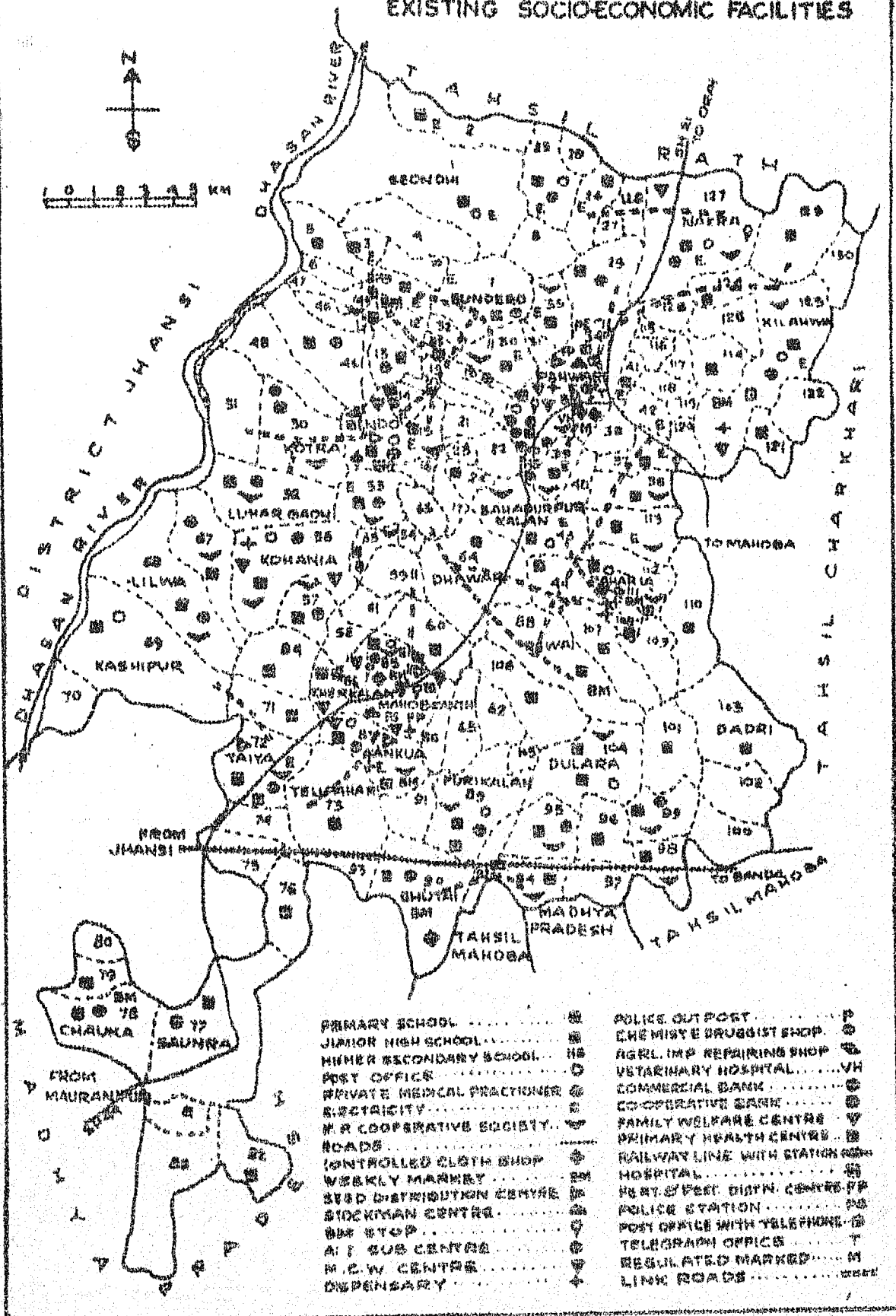
Note : 1. Figures in parentheses against the names of villages denote their location code.

2. Proposed functions/facilities for different villages have been presented in Annexure 1 also.





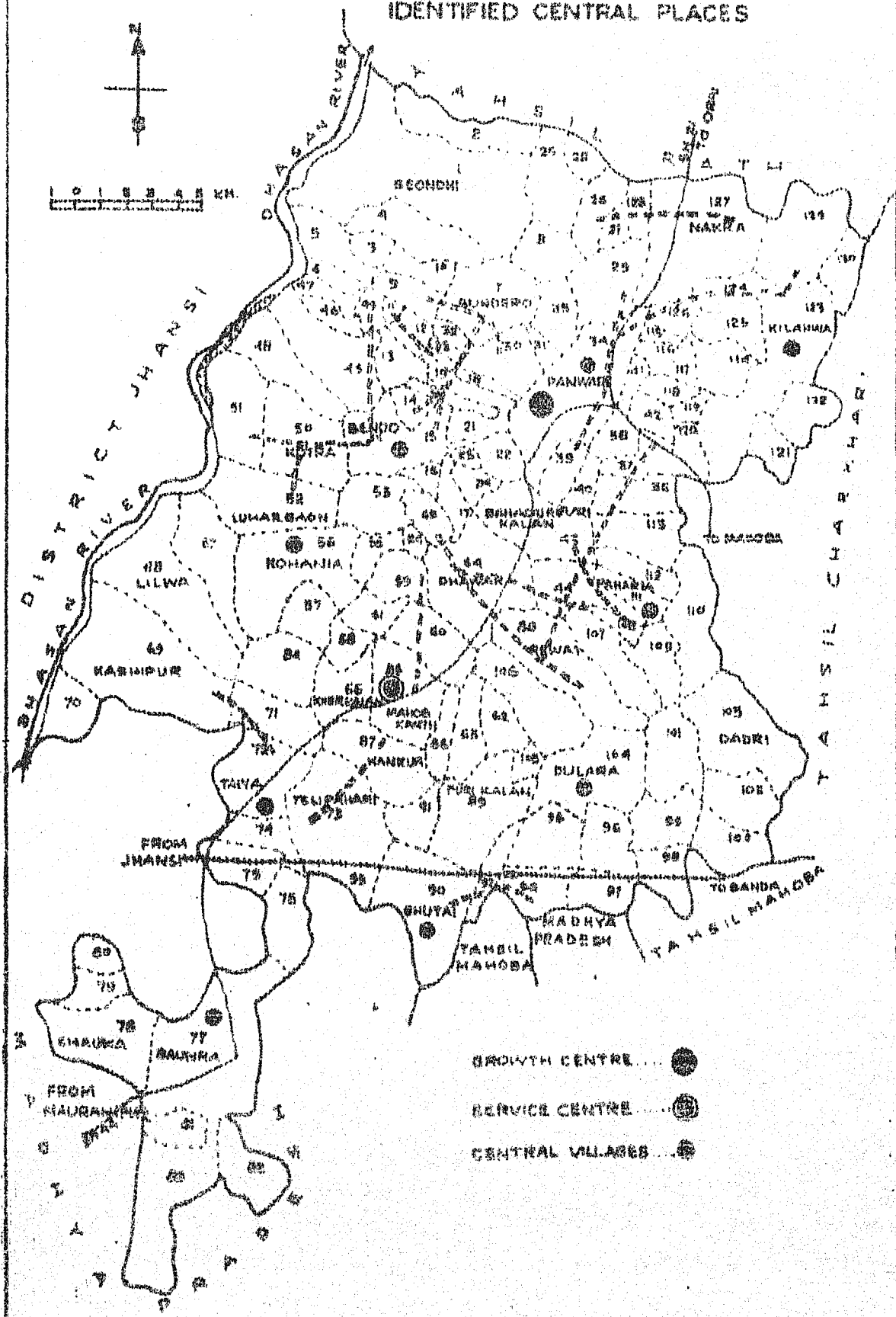
# PANWARI BLOCK-HAMIRPUR-U P EXISTING SOCIO-ECONOMIC FACILITIES





Map 3

PANWARI BLOCK - HAMIRPUR - U.P.  
IDENTIFIED CENTRAL PLACES





## CHAPTER V

### PROPOSED PROGRAMMES

In the earlier chapter we have identified central places in the block and have proposed certain functions for these places under different hierarchy. These places identified as focal points, have been considered suitable locations for creation of socio-economic infrastructure and decentralised development. In the present chapter we propose programmes for growth and diversification of potential activities and facilities in the area. These proposals have been given for the period of next five years.

The proposed programmes have been drawn in the specific context of the area. They are primarily based on the criteria of the availability of natural endowments, resource potentials, organizational and institutional structures, existing levels of development and requirements of the local population. Attempt has also been made to observe functional integration among various sectors in view of the existing and possible inter-sectoral linkages. Lastly, efforts have also been made to select programmes in such a way that maximum possible employment opportunities could be created as a result of their implementation, to the benefit particularly of the economically weaker sections of the population. The creation of employment would help in improving the social conditions of the local population and provide opportunities for advancement. The sector-wise programmes proposed for implementation are as follows :



## 1. Agriculture

Agriculture is the predominant economic activity in Panwari block as 90.43% of workers are engaged in it for their livelihood. The typical land characteristics i.e. the uneven rocky surface, and the type of soil i.e. Mar and Kabar have rendered the agricultural productivity low and cultivation difficult. Even a slight diversion from the agricultural time table renders the soil unsuitable for cultivation in both Rabi and Kharif seasons. The lack of irrigation facilities, low level of fertilizer consumption and non-adoption of new cropping pattern and appropriate crop rotation has further constrained the development of agriculture. Although there is scope for bringing more land under agriculture and increasing the productivity, it is possible if irrigation facilities are also simultaneously developed and cultivators exposed to the benefits of modern inputs and improved agricultural practices.

The expansion in irrigation facilities will have to be planned in such a manner that not only the net coverage is increased but it is also intensified in the already irrigated areas. The expansion in irrigation facilities would also help in bringing additional land under cultivation.

### 1.1 Land Use Pattern

At present, the net cultivated area i.e. sum total of the net area sown and the fallow land, in the block is 41906 hectares and net area sown is 37745 hectares, which is 78.02% and 70.27% respectively of the reporting area. The gross cropped area is 40020 hectares which indicate that the area sown more than once is 2275 hectares i.e. 6.03% of net area sown. The reported important crops cover an area of 38122 hectares out of which 8647 hectares or 22.68% is irrigated.



The block has 2979 hectares of unutilised land in the form of culturable waste. It is proposed to bring about 50 per cent (1490 hectares) of this waste area under cultivation during the next five years. As a result, the net cultivated area will rise to 43396 hectares in 1985-86. Accordingly, the area of fallow land will also increase to 4309 hectares, if the proportion of fallow land to net cultivated area is checked from increasing. The net area sown would, thus, be of the order of 39087 hectares. The proposed land use pattern for the terminal year of the plan is presented in table V - 1.

Table V - 1 : Proposed Land Use Pattern for the Terminal Year of the Plan i.e. 1985-86

Sl. No.	Description	Area (Hectares)
1.	Reporting area	53715
2.	Forests	3241
3.	Culturable waste	1489
4.	Fallow land	4309
5.	Barren and unculturable land	2213
6.	Land under non-agricultural uses	2841
7.	Pastures	-
8.	Area under trees, groves, etc.	535
9.	Net area sown	39087
10.	Area sown more than once	3920
11.	Gross cropped area	43007
12.	Intensity of cropping	110.03

The position of land use pattern at the terminal year (1985-86) indicate an increase of 3.56% in net area sown; 7.46% in gross cropped area and 72.31% in area sown more than once from the base year figures. The area sown more than once as percentage of net

area sown will increase from 6.03% in the base year to 10.03% in the terminal year. The intensity of cropping will increase from 106.03 to 110.03.

For increasing net cultivated area by bringing in additional area under cultivation, improving productivity and increasing the intensity of cropping, emphasis will have to be given on the application of soil conservation measures, augmentation of irrigation facilities, consumption of adequate quantity of fertilizers and suitable modifications in cropping pattern and crop rotation. These measures have been discussed in later sections.

### 1.2 Cropping Pattern and Cropping Intensity

With increase in irrigation facilities there is a possibility of change in the cropping pattern. The changes in the area under individual crops would be in terms of shifts from unirrigated to irrigated crops, inferior to superior food crops and from low value to high value crops. The area under important Kharif and Rabi food crops in the base year <sup>is</sup> 36086 hectares and under commercial crops 2036 hectares. Thus, the total cropped area is 38122 hectares and the gross cropped area is 40020 hectares as in the base year.

Considering the infrastructural facilities and attitudes of the cultivators the area under food crops is likely to increase from 36086 hectares in the base year to 39511 hectares, i.e. 9.49% and that of commercial crops from 2036 hectares to 2521 hectares, i.e. 23.82% in the terminal year of the plan period. The areas under different crops as proposed for the terminal year are presented in table V - 2.

Table V - 2 : Proposed Area Under Different Crops  
for the Terminal Year 1985-86

Crops	Area (Ha.)	% to Gross Cropped Area
1. Paddy	832	1.93
2. Jowar	8442	19.63
3. Urad	429	1.00
4. Moong	60	0.14
5. Small Millets*	685	1.58
6. Wheat	11264	26.19
7. Barley	1122	2.61
8. Gram	12698	29.52
9. Pea	67	0.16
10. Masur	1097	2.55
11. Arhar	2815	6.55
12. Linseed	618	1.44
13. Til	1023	2.38
14. Sugarcane	527	1.23
15. Rapeseed/Mustard	57	0.13
16. Groundnut	24	0.06
17. Tobacco	21	0.05
18. Sann-Hemp	159	0.37
19. Potato	67	0.16
20. Other vegetables	25	0.06
21. Other crops (not classified above)	975	2.26
Gross Area	43007	100.00

\* Small Millet crops comprise mandua, sawan, kodon, kakun and kutki.

The proposed areas under cereals and pulses for the year 1985-86 indicate that they cover 51.96% and 39.91% of the gross cropped area (GCA) respectively. The commercial crops account for 5.86% of the GCA. A number of inferior crops that have not been classified among the listed crops comprise 4.74% of the gross cropped area in the base year. These crops will have a smaller share in the terminal year of the plan, i.e. 2.27% of GCA.

As mentioned earlier the cropping intensity is likely to increase from 106.03 in the base year to 110.03 in the terminal year of the plan. Though it is not a substantial increase yet

development of irrigation facilities, emphasis on use of sufficient quantity of fertilizer, coverage of additional area under high yielding varieties of foodgrains and shifts in crop rotation are likely to increase productivity and production significantly.

### 1.3 Crop Rotations

The intensity of cropping indicate that usually single cropping is in practice in the block. In areas under irrigation, after harvest of paddy, wheat and after jowar, gram is sown in rabi season. But, the irrigated area is quite small. In the unirrigated area the following pattern is normally observed :

- |           |   |         |
|-----------|---|---------|
| 1. Paddy  | - | Fallow  |
| 2. Arhar  | - | Jowar   |
| 3. Fallow | - | Wheat   |
| 4. Fallow | - | Gram    |
| 5. Fallow | - | Linseed |
| 6. Fallow | - | Masur   |
| 7. Fallow | - | Mustard |
| 8. Til    | - | Fallow  |

As a result of the proposed increase in irrigation potential it is expected that the gross cropped area would increase during the period of the plan. Consequently, the intensity of cropping is likely to increase by 4 percentage points. It would be desirable to bring about suitable modifications in both the cropping pattern as well as crop rotations. These modifications, if adopted, are likely to influence the total agricultural production and productivity positively. The following crop rotations are, therefore, proposed for adoption in Panwari block during the plan period.

- |          |   |         |
|----------|---|---------|
| 1. Paddy | - | Wheat   |
| 2. Paddy | - | Gram    |
| 3. Til   | - | Wheat   |
| 4. Til   | - | Mustard |
| 5. Urad  | - | Wheat   |
| 6. Jowar | - | Gram    |

In unirrigated areas, cultivators may be persuaded to grow Barley/gram in rabi after harvesting Jowar/small millets. The proposed crop rotations are likely to increase not only the agricultural production of the block but will also create job opportunities for the block population.

#### 1.4 Area, Productivity and Production

For augmenting the level of agricultural production and productivity, efforts would be made to apply both extensive and intensive methods of cultivation. It is proposed to bring about additional area of 1490 hectares under cultivation through soil conservation measures. The timely supply of agricultural inputs such as fertilizers and seeds and expansion of irrigation facilities, if ensured, will increase agricultural production and productivity.

The proposed area under different crops presented earlier (Table V - 2) indicate that during kharif jowar will cover the largest area to the extent of 19.63 per cent of the gross cropped area, followed by paddy (1.93%), small millets (1.58%), urad (1.00%) and moong (0.14%). During rabi gram is proposed to cover 29.52%, wheat 26.19%, arhar 6.55%, barley 2.61%, masur 2.55% and pea 0.16% of the gross cropped area. Thus, among the important food crops<sup>of</sup> the block will be: gram, wheat, jowar, arhar, barley, masur and paddy.

The commercial crops comprise an area of 5.86% of GCA. Among the til, linseed and sugarcane are most important. They cover an area of 2.38%, 1.44% and 1.23% of the GCA. The total area under oilseeds will be 1722 hectares, i.e. 4.0 per cent of GCA. The potato and other vegetables will cover an area of 92 hectares.



Anticipating increase in the potentialities of the block the crop-wise areas would get suitably modified through proposed plan. The additional area for paddy (31.65%) and wheat (15.36%) has been proposed under high yielding varieties and gram (13.40%) under improved variety. The area under certain other food crops, such as urad, masur and pea will increase by 50, 50 and 25 hectares respectively while that of small millets will be reduced by 50 hectares.

Among the commercial crops, area under sugarcane is likely to increase by 200 hectares, til by 100, linseed by 50, potato by 50, sann-hemp by 30, and rapeseed/mustard, ground-nut and tobacco by 10 hectares each. An area of 25 hectares has been brought under vegetable cultivation. The area under other non-classified crops will consequently get reduced from the present 1898 to 975 hectares through the five year period.

The cumulative effect of the addition in area under cultivation, timely supply of agricultural inputs and increased irrigation facilities would certainly be in the form of higher productivity and production. The crop-wise productivity and production, which are proposed to be achieved during the period of the plan are presented in table V - 3. It indicates that in comparison to present levels of production, the output of foodgrains would increase by 21.04% (cereals 20.34% and pulsus 22.16%). The growth in the outputs of commercial crops is expected to be much higher in percentage terms by the end of the plan.



Table V - 3 : Yield Rates and Levels of Production of Important Crops by the Terminal Year of the Plan

Crops	Yield Rate (Qtls./Ha.)	Total Production (Qtls.)
1. Paddy	7.00	5824
2. Jowar	7.02	59263
3. Urad	2.30	987
4. Moong	2.46	148
5. Small Millets	6.65	4555
6. Wheat	12.10	136294
7. Barley	8.62	9672
8. Gram	7.86	99806
9. Pea	7.70	516
10. Masur	5.00	5485
11. Arhar	10.10	28432
12. Linseed	3.65	2256
13. Til	1.04	1064
14. Sugarcane	476.80	251274
15. Rapeseed/Mustard	3.10	177
16. Groundnut	7.50	180
17. Tobacco	10.86	228
18. Sann-Hemp	5.20	827
19. Potato	160.18	10732
Total Cereals (1+2+5+6+7)		215608
Total Pulses (3+4+8+9+10+11)		135374
Total Foodgrains (1 to 11)		350982

Note : Other crops 'not classified' have not been considered in the table.

Considering the increase in irrigation facilities and other inputs and coverage of more area under high yielding varieties of paddy and wheat and improved variety of gram and encouragement for adoption of improved practices, the yield rates of different crops would increase during the plan period. We expect that productivity (i.e. quintals per hectare) of paddy would increase from the existing 5.31 to 7.0, jowar from 6.52 to approximately 7.02, urad from 1.78 to 2.30, wheat from 11.09 to 12.10, barley from 8.11 to 8.62, gram from 6.86 to 7.86, masur from 4.86 to 5.00,

arhar from 9.56 to 10.10, linseed from 3.13 to 3.65, til from 0.74 to 1.04, sugarcane from 451.28 to 476.80, rapeseed/mustard from 2.60 to 3.10 and potato from 153.18 to 160.18 by the terminal year of the plan.

The total foodgrain production during terminal year of the plan is expected to be 350982 quintals or 35098 tonnes as against 289980 quintal at present. Taking into consideration of the population estimate for the terminal year, i.e. 1985-86, the per capita per day foodgrains production would be 959 grams. Assuming the average per capita consumption requirements of 475 grams per day the block would require 173824 quintals or 17382 tonnes of foodgrains per year. Thus, the annual production of foodgrains in the block is expected to be a surplus of 177158 quintals or 17716 tonnes over the consumption requirements of the block. We hope the quantum of present surplus of foodgrains would be increased by 33.66% in the terminal year of the plan.

The increase in the production of foodgrains and other commercial crops in the block conforms to the objective of increasing agricultural production. It would also go a long way towards enhancing the spending capacity of the population. A large number of small and marginal farmers and agricultural labourers are expected to benefit from the envisaged growth in the agricultural activity.

### 1.5 Coverage of High Yielding Varieties

The crops under high yielding varieties need timely supply of sufficient inputs such as seeds, fertilizer, pesticides and irrigation. At the same time, field demonstrations for publicizing and educating the cultivators are also required. The trend with

regard to the coverage of high yielding varieties in Panwari block indicate that among the five major high yielding crops varieties, namely paddy, wheat, maize, jowar and bajra, only paddy and wheat have gained grounds. There is a possibility and potentiality of bringing some area under improved variety of gram in the block.

It is proposed to add an area of 1700 hectares to the area under HYV of wheat and paddy during the period of the plan. An area of 2000 hectares has been proposed for cultivating improved variety of gram. Thus, the area under HYV/IV will be enhanced from the present 5468 to 9168 hectares, implying an increase of 67.67% over the base year area. 21628

The proposed coverage of high yielding varieties in the block by the terminal year is indicated in table V - 4.

Table V - 4 : Proposed Coverage of High Yielding Varieties/  
Improved Variety Crops During the Plan Period  
(in Hectares)

Description	Paddy	Wheat	Gram	Total
1. Base year area	434	5034	-	5468
2. Annual target in terms of additional area	40	300	400	740
3. Five year target in terms of additional area	200	1500	2000	3700
4. Total coverage by the terminal year of the plan	634	6534	2000	9168
5. Percentage of HYV/IV to total area under the crop :				
5.1 Base year (%)	68.67	51.56	-	25.32
5.2 Terminal year (%)	76.20	58.01	15.75	36.98

Note : HYV include paddy and wheat crops and improved variety (IV) include gram crop.

The percentage of high yielding variety area to total cropped area would be for paddy 76.2% (base year 68.67), wheat 58.01 (base year 51.56) and improved variety of gram 15.75 (base year 'nil').

The requirements of major inputs for these crops have been indicated in table V - 5. This exercise will facilitate planning for adequate and timely supply of these items.

Table V - 5: Material and Financial Requirements for the Proposed Coverage of the Area Under HYV/IV Crops

Description	Paddy	Wheat	Gram	Total
1. <u>Seed</u>				
1.1 Quantity (Qtls.)	36.00	1500.00	1600.00	3136.00
1.2 Value (Rs.)	14400	375000	1280000	1669400
2. <u>Fertilizers</u>				
2.1 Quantity (Qtls.)				
a) N <sub>2</sub>	160.00	1200.00	1200.00	2560.00
b) P <sub>2</sub> O <sub>5</sub>	80.00	600.00	600.00	1280.00
c) K <sub>2</sub> O	80.00	600.00	400.00	1080.00
2.2 Value (Rs.)	91200	684000	627000	1402200
3. <u>Pesticides</u>				
3.1 Quantity (Qtls.)	100.00	930.00	1500.00	2530.00
3.2 Value (Rs.)	27500	255750	412500	695750
4. Total Outlay (Rs.) (1.2 + 2.2 + 3.2)	133100	1314750	2319500	3767350
5. Subsidy (Rs.) ( $\frac{1}{3}$ of outlay)	44367	438250	773167	1255784

Note : HYV include paddy and wheat, gram is improved variety.

The per hectare requirement of seeds of high yielding varieties of paddy and wheat in the area are assessed at 18 kg. and 100 kg. respectively. For the improved variety of grams 80 kg. seeds are required for a hectare. The per hectare requirements of fertilizers in terms of nutrients would be : N<sub>2</sub> = 80 kg.,

$P_2O_5$  = 40 kg. and  $K_2O$  = 40 kg. totalling 160 kg. for paddy and wheat and  $N_2$  = 60 kg.,  $P_2O_5$  = 30 kg. and  $K_2O$  = 20 kg. for gram, i.e. total = 110 kg.

It has been assumed that the maintenance of the area already under HYV (till the base year) will be taken care of by the cultivators themselves with the help of the already existing institutional arrangements. Thus, financing would be required only for the additional area that would be brought under HYV development during the plan. The total financial requirement are estimated at about Rs.37.67 lakhs. It is observed that a majority of the cultivators would find it difficult, during the initial stage, to bear the total cost of inputs. Therefore, a subsidy of 33.3% of the costs of seeds, fertilizers and pesticides is recommended, which would amount to about Rs.12.56 lakhs.

For bringing in an additional area of 3700 hectares under HYV/IV, the cultivators would have to be educated and convinced of the gains of HYV/IV cropping. It is, therefore, proposed to carry out 50 and 20 field demonstrations of HYV paddy and wheat respectively and 20 demonstrations of IV gram. A one acre (0.4 hectare) land would be sufficient for one demonstration. These demonstrations should be carried out in a dispersed way. The cultivators' own lands should be used for the demonstration but their certain minimum returns should be assured to them. Thus, an area of 36 hectare would be covered for a total of 90 demonstrations during the plan. The requirements of inputs for these demonstrations are presented in table V- 6.



Table V - 6 : Agricultural Inputs Required for HYV/IV Demonstrations

Description	Paddy	Wheat	Gram	Total
1. Demonstrations (No.)	50	20	20	90
2. Area covered (Ha.)	20	8	8	36
3. <u>Seed</u>				
3.1 Quantity (Kg.)	360	800	640	1800
3.2 Value (Rs.)	1440	2000	5120	8560
4. <u>Fertilizers</u>				
4.1 Quantity (Kg.)	3200	1280	880	5360
4.2 Value (Rs.)	9120	3648	2508	15276
5. <u>Pesticides</u>				
5.1 Quantity (Kg.)	1000	496	600	2096
5.2 Value (Rs.)	2750	1364	1650	5764
6. Total Cost (Rs.) (3.2 + 4.2 + 5.2)	13310	7012	9278	29600
Subsidy to cultivators (Rs. @ 33.3% of the Cost)	4437	2337	3093	9867

The demonstrations of the three crops i.e. paddy, wheat and gram would cost Rs.13310, 7012 and 9278 respectively. Thus, the total investment during five years would be Rs.29600. The shares of seeds, fertilizers and pesticides would be 28.92, 51.61 and 19.47 per cent respectively. For generating interest among the cultivators for laying out these demonstrations, it is proposed that a part of the cost of seeds, fertilizers and pesticides be met by the government in the form of subsidy. A subsidy of 33.3% of the cost is, therefore, proposed. This will involve an expenditure of Rs.9867 out of the total outlay of Rs.29600. The remaining balance of Rs.19733 would be made available to the farmers as institutional finance.



So far, the benefits of high yielding varieties programme have largely gone to the large and medium sized farmers, and small and marginal farmers have benefited only partially because of their weak financial position. The provision of a subsidy on purchase of seeds, fertilizers and pesticides would help in popularising this programme among the small and marginal farmers.

#### 1.6 Establishment of Mini Agricultural Service Centres

For improving agricultural output and productivity levels, the use of improved equipment in the area is necessary. Since 6.73% of the total agricultural area is shared by 36.4% of cultivators having landholdings of less than one hectare, and, 20.99% of the agricultural area is shared by 36.6% of farmers having landholdings of in between 1 and 3 hectares. The small and marginal farmers do not have capacity to purchase costly items such as tractor. Moreover, the small and marginal farmers using persian wheels for irrigation purposes and some other implements find it difficult to get them repaired in case of any wear and tear as there is no repair shop in the block. At present there are 52 tractors, 1248 iron ploughs, 6373 blade harrows, bakher or guntuka, 41 wet and puddlers, 8 earth levellers or scrappers and 19 seed drills in the block. In case of need for repairs of any of these items the farmers have to go to distant places. It is, therefore, proposed to establish three Mini Agricultural Service Centres in the block. They may be established under the state sector at Panwari, Mahoba Kanth and Bendo. The main functions of these centres will be hiring of agricultural implements, selling of spare parts and undertaking repairs of pumping sets, persian wheels and other implements. The details of the agricultural implements that would be made available at these centres are presented in table V - 7.

Table V - 7 : Equipments to be Provided at the Proposed  
Mini Agro-Service Centres

Item	(in Number)			
	Panwari	Mahoba Kanth	Bendo	Total
1. Tractor	1	1	-	2
2. Alpad Thresher	5	5	5	15
3. Tippera	5	5	5	15
4. Seed-cum-fertilizer drill	5	5	5	15
5. Levelling implements	3	3	3	9
6. Welding machine	1	1	1	3

Besides, each centre will also be provided with hammers, anvils and some other small tools.

The total outlay required for establishing the proposed three mini agro-service centres is estimated to be Rs.9.026 lakhs. Item-wise details of outlays for establishing these centres are given in table V - 8.

Table V - 8 : Outlay for the Proposed Mini Agro-Service Centres

Item	Cost per Centre (Rs.)	Total Out- lay (Rs.)
1. Land and building	82000	246000
2. Implements including tools	45000	135000
3. Wages and salaries	73000	219000
4. Utilities (diesel, lubricants, water and electricity)	8000	24000
5. Insurance and taxes	3600	10800
6. Repairs and maintenance	18000	54000
7. Depreciation	25000	75000
8. Contingencies	3600	10800
Sub-total	258200	774600
9. Two tractors, one each for Panwari and Mahoba Kanth		128000
Total Outlay		902600

### 1.7 Establishment of Seeds Stores

There are, at present, seed stores at five places in the block, namely, Panwari, Mahoba Kanth, Bendo, Taiya and Alipura. The number of seeds distribution centres in the block is, therefore, not adequate to meet the requirements of cultivators for timely supply of quality seeds. Further, the present small number of stores can not serve properly the interior areas of the block. It is, therefore, proposed to establish six agricultural seed stores in the block. These stores are proposed for Ghutai, Kilhauwa, Kohania, Paharia, Dulara and Saunra, all of which are central places. The total outlay for establishing these stores is estimated to be Rs.4.20 lakhs @ Rs.70000 per store.

### 2. Soil Conservation

Soil conservation measures are very much needed in Panwari block because of the topography of the area. The moisture retention capacity of the soil is very low and also during rains the productive contents in the upper layer get washed away, resulting in reduction in the productive capacity of the soil. It is, therefore, proposed to carry out soil conservation measures in at least 5 per cent of the existing net area sown, reported to be 37745 ha. This target for soil conservation during the plan period is, therefore, proposed to be 1887 hectares. The soil conservation on the in-cultivation land would primarily involve moderate levelling, bunding and construction of water outlets (spill ways).

Another target for soil conservation would be the waste land area of 1490 hectares, proposed to be brought under cultivation. This would involve relatively greater amount of soil work for levelling and deep ploughing. Thus, the total area proposed to

be brought under soil conservation measures during the five year period would be 3377 hectares.

It is estimated that expenditure on soil conservation on an hectare of land already under agriculture would be Rs.1200 and Rs.1500 on culturable waste lands which is to be made cultivable. Thus, the total outlay on the proposed area works out to be Rs.44.994 lakhs including an expenditure of Rs.22.644 lakhs on soil conservation on land already under agriculture.

The outlay on soil conservation on the land already under agriculture, i.e. Rs.22.644 lakhs should be shared by the state and the cultivators equally, i.e. the government should meet 50 per cent of the total cost of work on this type of land and the remaining 50 per cent of the cost be met by the cultivators. However, it is recommended that only such land should be selected for soil conservation which is in possession of small and marginal farmers.

### 3. Irrigation

For augmenting agricultural development, adequate irrigation facilities are considered the most important input. It helps not only in increasing the cropping intensity, productivity and cultivation of high yielding varieties but also help in developing the waste land and in changing cropping pattern in terms of shifts from low value to high value crops. At present, the net irrigated area under cultivation is 8976 hectares. The percentage of net irrigated to net area sown in the block is 23.78 and that of gross irrigated area to gross cropped area is 22.55. This suggests that a very large part of the cultivation is carried out on un-irrigated lands. Efforts would, therefore, be made to explore the

possibilities of creation of additional irrigation potential of 2375 hectares. It is estimated that, with this addition in irrigation potential in the block the net irrigated area in the block would increase to 11351 hectares, i.e. by 26.46%, while the gross irrigated area would increase by 42.18%. The area irrigated more than once in the base year is 48 hectares. It would increase to 1704 hectares during the next five years.

The state irrigation works have very little scope in the area because of the uneven land, difficult terrains and the topography. Emphasis is, therefore, laid on construction of masonry wells, persian wheals, bundhies and installation of pumping sets for increasing the irrigation potential in the block during the plan period. Thus, table V - 9 present the proposed physical targets and outlay for private minor irrigation works.

Table V - 9 : Plan Targets and Outlay for Private Minor Irrigation Works

Item	Number	Irrigation Potential (Ha.)	Outlay (lakh Rs.)
1. Masonry wells	450	450	40.50
2. Persian wheels	450	225	9.00
3. Pumping sets	250	500	17.50
4. Construction of Bundhies (Ha.)	1200	1200	9.00
Total		2375	76.00

Note : The estimated cost per unit of masonry well, persian wheel, pumping set and bundhi is Rs.9000, Rs.2000 Rs.7000 and Rs.750 respectively.

The total outlay required for creation of the above irrigation potential is estimated at Rs.76.00 lakhs. The farmers will be provided a subsidy of 25 per cent, i.e. Rs.19 lakhs, from the state sector and 50 per cent, i.e. 38 lakhs will be advanced as long term loan through institutional finance. The remaining 25 per cent of outlay will be contributed by the cultivators themselves.

#### Blasting and Revitalising of Wells Unit

For increasing the storage capacity of the existing as well as proposed wells and revitalising the unserviceable wells it is proposed that a blasting and revitalising unit should be set-up in the block. The unit will consist of one 35 HP tractor with trolley and one complete set of equipments used for blasting. A shed of 20' x 15' would be required for housing this unit at Panwari.

A total of Rs.1.87 lakh are estimated to cost the unit and it is proposed that the unit be set up under state sector. The unit would normally meet the blasting requirements of 300 wells annually. Hence it would be possible to maintain regular working of about 1500 wells during the period of the plan.

The irrigation potential of the block will be raised from increasing the use of persian wheels, pumping sets and bundhies, besides the construction and revitalisation of wells. It is proposed that all the new masonry wells should be fitted either with persian wheels or pumping sets.

With the proposed increase in the irrigation potential of the block the irrigated area under important crops will increase by 42.18 per cent. Table V - 10 indicate the irrigated area under



different important crops. It is expected that irrigated area under paddy, wheat, gram, pea and masur would increase significantly by the terminal year of the plan.

Table V - 10 : Irrigated Area Under Important Crops by the Terminal Year of the Plan

Crops	Total Area (Ha.)	Irrigated Area	
		Ha.	% to Total
1. Paddy	832	204	24.52
2. Wheat	11264	5886	52.26
3. Barley	1122	306	27.27
4. Gram	12698	4378	34.48
5. Pea	67	67	100.00
6. Masur	1097	705	64.27
7. Sugarcane	527	527	100.00
8. Potato	67	67	100.00
9. Rapeseed/Mustard	57	15	26.32
10. Linseed	618	93	15.05
11. Vegetables	25	25	100.00
12. Tobacco	21	21	100.00

#### 4. Animal Husbandry

The importance of the livestock in rural areas is next to agricultural land as it helps in supplementing the income particularly of small/marginal farmers and landless labourers. But, the quality of the livestock, particularly, cattle and buffaloes is generally poor in terms of body weight, draught power and milk yield. The average milk yield of a cow is assessed at less than a litre and that of a she-buffalo about a little over a litre per day during milching period.

The reasons for poor quality of the livestock include adverse climatic conditions, lack of sufficient quantity of green fodder and insufficient health cover. The local variety of goats are better and, therefore, goat rearing is popular, particularly, among the poorer sections of the block. Although poultry farming is not a significant activity but it has scope for development, particularly, in villages connected by pucca roads. Because of the poor quality of animals, special attention, therefore, needs to be paid for the development of animal husbandry, as it is an important activity in rural areas and a source of support for the small/marginal farmers and landless labourers. The following programmes are proposed for the animal husbandry sector :

#### 4.1 Distribution of Milch Cattle

To provide employment and income opportunities to marginal farmers and agricultural labourers, it is proposed to distribute 700 she-buffaloes in the block and efforts should be made to encourage dairying in the area. Since the imported breeds of the animals do not generally sustain the climate of the area it is suggested that local improved breeds such as 'Bhadwari' may be selected for distribution. The average cost of a she-buffalo would be around Rs.2900. Thus, the total outlay for distribution of milch cattle would be Rs.20.30 lakhs for the plan period. Of this outlay, the government will provide subsidy to the marginal farmers and agricultural labourers @ one-third of the cost, which will be Rs.6.77 lakhs and the remaining Rs.13.53 lakhs will be provided to them as loan through institutional finance.

#### 4.2 Goat Rearing Programme

The main objective of this scheme would be to improve the quality of goats and increase productivity of milk, ghee and meat. This is important not only because of production of additional milk for household consumption but also because of wide market for goat meat in the area. The programme is likely to benefit labourers and marginal farmers.

At present, there are about 12500 goats in the block, majority of them are of indigenous breed. It is, therefore, proposed that 300 marginal farmers and agricultural labourers be supplied improved Jamunapari goats @ 3 goats per person. Thus, the total number of goats to be distributed will be 900, besides distribution of 18 bucks for natural service. The programme may cover 15 villages of goat concentration in the block.

The total outlay required for carrying out this programme is estimated at Rs.3.69 lakhs, at the rate of Rs.400 per goat and Rs.500 per buck. The government will provide a subsidy of 50% (1.80 lakh) to the beneficiaries and also meet the total cost of 18 bucks, i.e. Rs.0.09 lakh, meant for breeding purposes. The beneficiaries will be made available the remaining cost of the goats amounting to Rs.1.80 lakh through institutional finance.

#### 4.3 Poultry Farming

The objective is to initiate poultry farming activity in the block on commercial lines. At present, there are 971 adult hen in the block and only two small poultry units are being maintained. Considering <sup>the rising demand for eggs in the area</sup> / development of poultry is considered feasible. For the five year plan period it is, therefore, proposed to set-up 6 poultry farms of 100 birds each. Among them, 2 units may be set-up

in Nakra and one each in Kankuan, Dhawar, Rewai and Jakha. These villages are connected by pucca road and are comparatively large sized. Nakra and Jakha villages are adjoining Panwari, Kankuan is adjoining Mahoba Kanth a proposed service centre and Dhawar and Rewai are in between the proposed growth and service centres. These villages will, therefore, be better served with veterinary services.

Every beneficiary will be supplied 115 female chicks as it is estimated that 100 birds will survive to be developed into quality layers. Deep litter system is recommended for rearing of the birds because of relatively high incidence of infection and diseases in the area.

A poultry farm would require, a poultry shed of about 200 sq.ft. and some ordinary equipments such as feeders, waterers, egg laying boxes and trays. It is estimated that the construction of the poultry shed and purchase of necessary equipment would cost Rs.3100. The cost of 115 chicks and their maintenance during the first six months of their growth would be about Rs.2200. Thus, the total expenditure on setting up a unit would be Rs.5300, and on the 6 proposed units Rs.31800. The cost of chicks and their maintenance will be borne by the beneficiaries themselves, whereas, of the total capital cost i.e. Rs.18600, 25 per cent (Rs.4650) will be spent by the government as subsidy to the beneficiaries and the remaining Rs.13950 will be provided to them as loan through institutional finance.

#### 4.4 Veterinary Facilities

The existing veterinary facilities are quite inadequate to provide proper health cover to the present livestock population,

particularly, in interior areas of the block. Considering the existing facilities and the requirements of the block with increased livestock population during the next five years it is proposed to establish 7 stockman centres with Artificial Insemination Sub-centres. These centres are proposed to be located at Ghutai, Kilhauwa, Taiya, Kohania, Paharia, Dulara and Saunra central villages. Besides, two Artificial Insemination Sub-Centres are proposed for Mahoba Kanth and Bendo, to be attached to the existing Stockman Centres there.

The total outlay required for one stockman centre and one A.I. Sub-Centre is estimated to be Rs.50000 and Rs.35000 respectively. The total outlay for the proposed programme is thus estimated to be Rs.6.65 lakh.

#### 4.5 Fodder Development

The milch cattle in the block are generally underfed and lack of proper nutritive fodder is deterring the dairy development. A proposal has been made to distribute 700 she-buffaloes in the block. The purpose is to develop dairying in the area. But, this programme can not succeed unless steps are taken for ensuring proper maintenance of the animals. Thus, provision for nutritive feeds and fodder is essentially required with a view to bringing about improvement in the conditions of milch cattle.

It is proposed that fodder cropping be initiated in 10 hectares on experimental basis. The improved fodder crops in the block during the period of next five years will include Barseem (5 ha.) Oat (2 ha.) and M.P. Chari (3 ha.).

The seed requirements per hectare of these crops are estimated at 25 kg. for Berseam, 40 kg. for Oats and 40 kg. for M.P. Chari. The prevailing prices of the respective fodder seeds are : Rs.7.00 Rs.2.50 and Rs.3.50 per kg. The total outlay for this programme works out to Rs.1495.

Considering the weak economic conditions of the small and marginal farmers it is proposed that the government should bear 50 per cent of the cost by way of giving subsidy. The total amount of money required from the state sector would be Rs.748.

#### 5. Cooperatives

The cultivators are showing interest in cultivation of potato and other green vegetables. Though the area under cultivation of this commercial crop is small (i.e. 17 hectares) but the yield rate is significantly high. With this in view, an area of 67 hectares has been proposed for cultivation of potato and 25 hectares for other vegetables during the plan period.

With a view to encouraging cultivators by providing storage facilities, one cold storage has been proposed at Panwari during plan period. It is estimated that about Rs.5 lakhs would be required for establishing it. It is recommended that this cold storage is established under the cooperative sector.

#### 6. Construction of Roads

Roads play a very important role in the development of socio-economic conditions of the society. It is, in fact, a pre-condition for the spread of developmental activities and for growth of economy. For the development of the block it is desirable that all the villages should be connected by pucca roads but considering the high cost involved in their construction and the existing resource



constraints we are proposing construction of only the most essential roads.

A large part of the interior areas of the block is deprived of this facility. Even some of the identified central places such as Bendo, Ghutai, Kohania, Paharia and Dulara are not linked with pucca road. The proposal of road programme is based on the requirement that pucca/kankar roads are provided in such a manner that all the identified central places are connected by State Highway. This will help in the proper development of these places and a number of villages will also have access to important facilities available at Growth/Service centre or at central villages.

It is, therefore, proposed that seven kankar roads measuring 37 kms. be constructed in the block, details of which are provided in table V - 11.

Table V - 11 : Proposed Kankar Laid Roads

Proposed Roads		Length in Kms.
1. Ghutai	- Tundar	5
2. Dulara	- Mahoba Kanth	6
3. Paharia	- Bahadurpur Kalan	4
4. Kilhauwa	- Chhatesar	4
5. Bendo	- Panwari	5
6. Lilwa	- Mahoba Kanth	7
7. Seonrhi	- Panwari	6
Total		37

The total outlay required for construction of the seven kankar roads is estimated to be Rs.22.20 lakhs at the rate of Rs.60000 per km. The roads will be 10 feet wide and a kachhi patri of 5 feet width on both sides.

So far, 9 villages are connected with pucca roads and 6 villages are located at a distance of less than a km.\* With the construction of the proposed roads the number of villages connected by pucca roads will increase to 29. The additional 20 villages connected with the proposed roads have (1971 Census) a population of 18503, i.e. 24.92% of the block's population.

The Ghutai-Tundar road, starting from the boundary between Ghutai and Imilia will go to Tundar via Ruri Kalan. It will be connected to the proposed Dulara - Mahoba Kanth road which will pass through Tola Pantar, Bhura and Tundar villages. The Paharia - Bahadurpur Kalan road will pass through Didwara. The Kilhauwa - Chhatesar road will be connected to State Highway 44 (Panwari to Charkhari block) at Chhatesar. It will pass through Jamala village. The Bendo - Panwari road will pass through Jagpura Bugurg. The Lilwa - Mahoba Kanth road, starting from village Lilwa will go to Kohania via Dharwar, and from there will turn towards Mahoba Kanth passing through the borders of Tikaria, Chamarra and Richhara and the village Khera Kalan. The Seonrhi - Panwari road will pass through Budero and Lodhipura.

#### 7. Industrial Development

So far, block Panwari has not developed as an industrial area because of lack of sufficient infrastructural facilities like power, road and transport, which are pre-requisites for industrial development. Keeping in view the potentials and requirements of the block it is proposed to establish 16 small scale industrial units in the block area. While proposing establishment of industrial units, the infrastructural requirements were taken note of and, there-

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\* Statistical Bulletin 1979, Office of the Economics and Statistics Officer, Hamirpur.

fore, these facilities have also been proposed at appropriate places in this chapter.

### 7.1 Small Scale Industries

Effort has been made to suitably disperse these units in different identified central places of the block. Emphasis has been given on developing such small scale and Khadi and Village industries which could generate greater employment opportunities to the local people. The details of the proposed industrial units are given in table V - 12.

Table V - 12 : Proposed Small Scale Industrial Units and Their Locations

Name of Unit	No.	Location	Total Investment (Lakh Rs.)
1. Tanning : Sole Leather	1	Panwari	6.36
2. Carcass Utilization Sub-Centre	1	Panwari	2.82
3. Bone Crushing	1	Panwari	3.90
4. Blanket Weaving	1	Kohania	3.17
5. Durri Weaving	1	Dulara	1.07
6. Stone Crushing	1	Chhatesar	4.68
7. Dal Mill	2	Panwari, Mahoba Kanth	7.78
8. Agricultural Implements	2	Dulara, Saunra	2.20
9. Wooden Furniture	2	Panwari, Mahoba Kanth	2.50
10. Cement Jali and Pipe	1	Panwari	0.50
11. Bakery Products	1	Panwari	0.80
12. Atta Chakki-cum-Oil Crushing	1	Panwari	1.50
13. Exercise Note Books and Printing	1	Panwari	1.35
Total	16		38.63

Of the proposed 16 industrial units, project feasibility reports for six units, namely, tannery, carcass utilization sub-centre, bone crushing, blanket weaving, durri weaving and stone crushing, have already been submitted to the sponsoring agency. The location of the only one unit, i.e. stone crushing, will be from outside the identified central places because of a large stock of stones at that place. The location-wise distribution of industrial units is : Panwari 9, Mahoba Kanth and Dulara : 2 each, Kohania, Chhatesar and Saunra : one each.

For establishing small scale industries in industrially backward districts, such as Hamirpur, a subsidy of 15% of the Capital cost is given by the Government of India under RIP. Besides, some other incentives are also given to entrepreneurs, such as, concessional financing, exemption from octroi, power subsidy, supply of scarce raw materials etc.

The total outlay for the proposed 16 industrial units would be Rs.38.63 lakhs. Out of which the fixed capital requirement would be for Rs.21.58 lakhs. A subsidy of Rs.3.24 lakhs will be available from the government and Rs.12.84 lakhs as long term loan for fixed assets from the institutional sources. The entrepreneurs will have to invest Rs.5.50 lakh from their own sources. The requirement for working capital would be to the tune of Rs.17.05 lakhs which will come from financial institutions as short term loan. The financial break-ups of the total outlay of Rs.38.63 lakhs are : state sector : Rs.3.24 lakhs, institutional finance : Rs.29.89 lakhs and public contribution : Rs.5.50 lakhs.

## 7.2 Khadi and Village Industries

Besides 16 small scale industrial units, 23 units have been proposed under Khadi and Village Industries sector. These units have been proposed with the consideration that the Khadi and Village Industries Commission/Uttar Pradesh Khadi Gramodyog Board will finance these schemes. The loan equivalent to almost the total cost of the unit will be available to the participant of Panwari block. The KVIC also provide assistance and help for marketing of the output of these units. The details of the proposed units are presented in table V - 13.

Table V - 13 : Proposed Khadi and Village Industrial Units and Their Locations

Name of Unit	No.	Location
1. Soap Making	3	Panwari, Kohania, Dulara
2. Carpentry	2	Bendo, Ghutai
3. Shoe Making	10	Panwari, Mahoba Kanth, Bendo, Ghutai, Kilhauwa, Taiya, Kohania, Paharia, Dulara, Saunra
4. Blacksmithy	3	Taiya, Bendo, Kilhauwa
5. Match Box	3	Taiya, Paharia, Kilhauwa
6. Papad Making	2	Panwari, Mahoba Kant

The Khadi and Village Industries Board will provide all type of financial as well as technical assistance in establishing these units. The advantage of these units is that they are employment oriented.

## 8. Power

At present 25 villages of the block are electrified.\* These villages are : Bendo, Garrauli, Budero, Masudpura, Niswara, Panwari,

\* According to the information supplied by the Block officials.



Lodhipura, Bijrari, Deogaonpura, Bahadurpur Kalan, Simaria, Chhatesar, Alipura, Raimalpura, Mahoba Kanth, Kankuan, Nepura, Taiya, Nakra, Kilhauwa, Seonrhi, Salaiya Khalsa, Gangurho, Turra Mohar and Shergarh. The list of electrified villages shows that out of eight identified central villages five, namely, Ghutai, Kohania, Paharia, Dulara and Saunra are not electrified.

In view of the importance of power for agricultural, industrial and social development it is proposed to electrify 17 more villages during the next five years. These will include the remaining five central villages. Alongwith them 12 other villages will be connected with power as they are expected to fall along the power line. Tentatively, the power lines can be extended from Bahadurpur Kalan to Paharia, Paharia to Dulara, Kankuan to Ghutai, Taiya to Saunra and Mehoba Kant to Kohania. It is, however, not possible to present a layout plan for the proposed power lines. The villages proposed to be connected by power lines during the plan period are : Paharia, Didwara, Byarja, Para Panthar, Rewai, Dulara, Deogaon, Ruri Kalan, Ghutai, Teli Pahari, Garo, Saunra, Khera Kalan, Ricchara, Chamarra, Tikaria and Kohania. The electrification of these village will accelerate industrial growth in particular as a number of industrial units have been proposed for the central villages under the plan.

The total length of HT/LT lines for the proposed 17 villages is estimated to be 30 kms. Taking the average cost of extension of power supply @ Rs.40000 per km., the outlay will be Rs.12.00 lakhs. The entire cost could be met by the Rural Electrification Corporation.



## 9. Education

Educational facilities play a significant role in the overall development of an area as it provide opportunities for exposure to new ideas and encourage people for adoption of new programmes. In Panwari block, there are 93 (77 for boys and 16 for girls) Junior Basic Schools, 10 (7 for boys and 3 for girls) Senior Basic Schools and 1 Higher Secondary School. Whereas all the identified central places have junior Basic Schools, 4 of them, Ghutai, Kohania Mahoba Kant and Saunra do not have a senior basic school. Since there is a SBS at Kankuan, adjoining Mahoba Kanth, we are not proposing a senior basic school at Mahoba Kanth. Instead, we propose that a SBS be established at Seonrhi, which has a population of over 2100.

It is, therefore, proposed that Senior Basic Schools be established at Ghutai, Kohania, Saunra and Seonrhi. The higher secondary school located at Panwari is quite far off from a large number of villages. Thus, the facility for higher secondary education is inadequate in the block. We, therefore, propose one higher secondary school at Mahoba Kanth, which has been identified as a service centre.

The total number of educational institutions proposed to be set up in the block during the plan period is 6 (4 senior basic schools, one higher secondary school and 1 degree college). After the establishment of these institutions the number of senior basic schools will increase to 15 and higher secondary schools to 2 by the terminal year of the plan. There is need to set up a degree college at Panwari as there is no such college in the block.

The total outlay required for establishing 4 senior basic schools, 1 higher secondary school and 1 degree college is estimated to be Rs.27.48 lakhs @ Rs.1.37 per senior basic school, Rs.4 lakhs for a higher secondary school and Rs.18 lakhs for a degree college.

#### 10. Medical and Health

There are 7 dispensaries, 8 maternity and child welfare centres, 4 family welfare centres and 1 primary health centre in the block. The location of the existing health care institutions is somewhat problematic and the facilities inadequate for most of the villages. Even a number of identified central places lack these facilities. From amongst the central places Panwari, Mahoba Kanth, Paharia and Kohania have both dispensaries and maternity and child welfare centres. Panwari, Mahoba Kanth and Kohania also have family welfare centres, a 'middle order' facility. 9 of the central places have private medical practitioners and the remaining place, i.e. Dulara has scope for one. There are 3 chemists shops, all at Panwari. Thus, chemists and druggists shops may be set-up at the remaining nine central places.

into  
Taking  $\angle$  account the existing governmental health care institutions in the block and the requirements of the population it is proposed to establish maternity and child welfare centres at Ghutai, Dulara and Saunra and dispensaries at Bendo, Ghutai, Taiya, Dulara and Saunra.

Although primary health centre, a 'middle order' facility is missing in the identified service centre, Mahoba Kant. However, the existing primary health centre at Panwari seems to be sufficient

for the plan period. We have, therefore, not included it among the proposed medical institutions. Its establishment may be considered over a period of time, may be beyond the period of reference of this plan. Although two central places, Kilhauwa and Taiya do not have maternity and child welfare centres yet we are not proposing its establishment at these places because a MCW centre is located at Nakra, a village adjoining Kilhauwa and another at Khera Kalan, a village nearby Taiya.

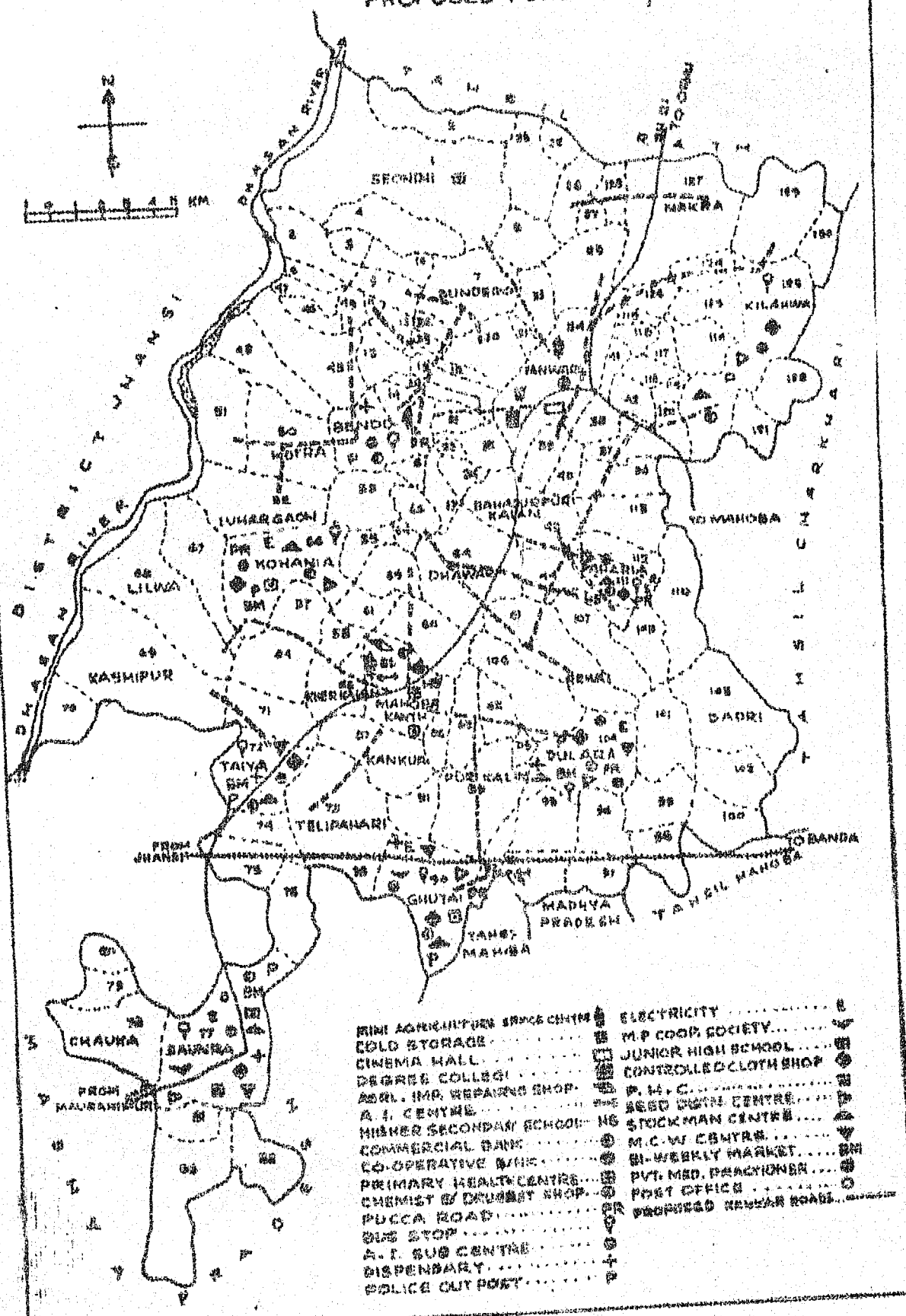
The number of units proposed to be established during the plan period are : maternity and child welfare centres 3 and dispensaries 5. The total cost for establishing these institutions would be Rs.12.4 lakhs. Of these, Rs.2.4 lakhs will be spent on setting up of maternity and child welfare centres, @ Rs.0.80 lakh per centre, and Rs.10.0 lakhs on dispensaries, @ Rs.2.0 lakhs per dispensary. The costs of the private facilities such as private medical practitioner and chemists and druggists shops are to be borne by the individuals concerned.

The proposals for development of socio-economic infrastructure are shown in Map 4.



Map 4

# PANWARI BLOCK-HAMIRPUR-U.P. PROPOSED FUNCTIONS/FACILITIES







## CHAPTER VI

### PLAN IMPLEMENTATION

Rural society has certain characteristics different from an urban society. It is tradition bound and homogenous in terms of values and social norms and less exposed to the outside world due to the limitations of communication. New ideas and changes in their practices suggested by outside people/agency are generally ignored by them at least initially. Thus, for generating interest among the rural masses for participating in certain new schemes/programmes communication plays a very significant role. While launching a programme, the implementing agency has to keep in mind the values, traditions and limitations of the target populations. A meaningful rapport between the implementing agency and the people is essential for achieving substantial results. Conditions should, therefore, be created to imbibe enthusiasm among individuals and groups about the development programmes so that they make their maximum contribution in making implementation of the programmes successful.

The main objective of the Integrated Rural Development Programmes is to raise families in the identified target groups above an abject poverty level by making available productive and gainful employment opportunities to them. The achievement of this goal depends on how realistically the target groups are identified, how much the agency is tuned to the realization of the goals.

The implementing agency has also to be careful in devising action plans which are appropriate to the given socio-economic base, as the task of implementation is not very simple and straight forward. A plan for socio-economic development cannot

provide absolutely perfect guidelines for developmental activities. The reasons are obvious, such as data gaps and time and resource constraints. It can provide certain interrelationships and forecasts only probabilistic in nature. One, from outside the scene, cannot exactly anticipate as to how the people would respond to creation of certain infrastructural facilities, new regulations or incentives provided by the government. The implementation agency should, therefore, be more concerned with fostering the process of development rather than being very rigid about the targets and guidelines provided by the plan. For example, the six project feasibility reports, submitted to the sponsoring agency earlier and integrated with this plan, provides necessary details for the guidance of the implementation agency. But, for efficient implementation, certain flexibilities are essential because of an inevitable time lag between formulation of the plan and its implementation and a likelihood of differences among the options perceived by the planners and the entrepreneurs and beneficiaries. Thus, the implementation agency should not be rigid in following the guidelines provided in the plan. Instead, it should amend them suitably, wherever necessary.

The implementing agency should try, as far as possible, to achieve the targets suggested in the plan document and follow the directions in which the changes are desirable. But, care must be taken for proper identification of the potential beneficiaries on the basis of objective criteria as there is likelihood of pressure from influential sections to corner the benefits of certain important programmes to themselves. The agency has also to be cautious that the resources are not wasted by the beneficiaries. It is possible

that certain potential beneficiaries are selected without knowing fully that they would be enthusiastic about the programme. In such a situation the wastage of resources is likely to be higher. Thus, the programmes such as distribution of she-buffaloes and goats and setting up of poultry units may be carried out cautiously, ensuring minimum wastage of resources. The programmes should not be launched in a haste. Sufficient ground work would be required for preparation of detailed phasing of the programmes and evolving criteria for selecting the potential beneficiaries if the programme calls for it. At the same time the programme contents and their advantages will have to be well publicised.

A close check on wastage of resources to be made available to the beneficiaries as financial assistance is as much important as fulfilling of the targets. The implementation agency has to keep a constant vigil on the progress of these programmes. Periodical checks by supervisory staff, maintenance of appropriate records of the progress of the programmes, verification of the physical progress on records, and keeping constant touch with the beneficiaries may help in ensuring minimum wastage. There should be an effective system to examine whether the reported achievements are realistic.

For efficient implementation concurrent evaluation, periodical reviews and monitoring of the programmes are necessary. Therefore, the progress of the programmes based on field reports of officials of different level, the problems faced by the VLWs and other officials and the suggestions put forward by the officials and beneficiaries should be discussed in the monthly meetings at the block and the district levels towards minimising wastages and activating the beneficiaries.

The rules and procedures, wherever necessary, should be simplified on the basis of field experiences so as to avoid bottlenecks in the process of development. The attitude of the personnel belonging to the implementation agency towards the beneficiaries should be that of helpers and friends. This does not mean that the rules are ignored. But, the beneficiaries should have a feeling that the agency owe the responsibility of considering and solving their problems. It is therefore desirable to place right kind of personnel in the field, particularly in backward areas, and provide them adequate facilities for efficient delivery of the task of rural development.

## CHAPTER VII

### FINANCIAL IMPLICATIONS

The prime objective of the present integrated area development plan is to reduce the extent of poverty and inequality among the people of Panwari block. To achieve this goal the strategy that has been adopted include :

- a) better exploitation of the existing local resources;
- b) generation of employment opportunities for the under/unemployed; and,
- c) generation of additional income for the people living below poverty line.

The development programmes that have been proposed in chapter V for the initial five year period relate to various sectors. Proposals made in the plan include improvement of the existing activity profiles, particularly the agriculture and animal husbandry, development of infrastructural facilities needed for production and for improving the quality of life of the people. It will also help in raising the social conditions of the area. Efforts have also been made to select such programmes/schemes which are need based and employment oriented. Thus, their larger benefits would go down to the weaker sections of the society. Development of the infrastructural facilities would however be the major burden on the plan resources.

The financial implications have been mentioned alongwith proposals described in chapter V. The finances for these programmes (Rs.322.839 lakhs) will come from the state sector, financial institutions and public contribution. The total contribution from the three sources would be Rs.173.166, 108.712 and 40.961 lakhs res-

pectively. Thus, the major share will be of the state sector (53.64%) which would be required for development of basic infra-structural facilities and for subsidising the input costs of activities intended to be carried out in the private sector. The financial institutions will cover a part of the investment requirement which is not subsidised by the government and which cannot possibly be arranged by the participants on their own. The contribution of these institutions such as banks and others would be 33.67% of the total outlays. The participants' contribution would be 12.69% of the total financial requirements of the plan.

The share of different programmes in the total outlays would be as follows :

Agriculture : 15.86%	Soil Conservation : 13.94%
Irrigation : 24.12%	Animal Husbandry : 9.62%
Cooperatives: 1.55%	Roads : 6.88%
Industries : 11.97%	Power : 3.72%
Education : 8.51%	Medical & Health : 3.84%

This outlay includes the requirements of the six projects submitted to the sponsoring agency earlier. The summary of sectoral break-ups are presented in the following table and the details are given in Annexure 3.



Table VII - 1 : Sectoral Outlays for the Proposed Programmes  
(Summary)

(Rs. in lakh)

Sector	S o u r c e			Total
	State Sector	Financial Institutions	Individual Contribution	
1. Agriculture	25.895	25.307	-	51.202
2. Soil Conservation	33.672	-	11.322	44.994
3. Irrigation	20.870	38.000	19.000	77.870
4. Animal Husbandry	15.409	15.515	0.139	31.063
5. Cooperatives	-	-	5.000	5.000
6. Roads	22.200	-	-	22.200
7. Industries	3.240	29.890	5.500	38.630
8. Power	12.000	-	-	12.000
9. Education	27.480	-	-	27.480
10. Medical and Health	12.400	-	-	12.400
Total	173.166	108.712	40.961	322.839
Percentage to Grand Total	53.64	33.67	12.69	100.00



## CHAPTER VIII

### THE ORGANIZATIONAL SET-UP

The present chapter reviews organizational set-up existing at the block and suggest some changes required for its improvement. The present set-up,\* headed by the Block Development Officer, include 6 Assistant Development Officers (one each for agriculture, plant protection, cooperative, panchayat, minor irrigation and statistics), 1 veterinary assistant surgeon and 10 Village Level Workers. Besides, there are 10 persons in different categories of the office staff. The BDO is responsible for implementing various development programmes, assigned to the block by the district level authorities, maintenance of records pertaining to different programmes of the block area and communicating the progress and the prospects of the programmes to district level authorities. In his functioning the BDO is assisted by the Assistant Development Officers and the Village Level Workers (VLWs).

The VLWs are the basic workers for carrying out the task of development and remain in direct touch with the population of their circles and maintain link between the block organization and target population. They act as messengers, motivators and guide to the people of their circles. Thus, the VLWs are placed in a crucial position in the block organization and, therefore, efforts should be made to further activise this cadre. For this purpose short duration (i.e. about 3 days) six monthly workshops may be organized for them at the district level where they are provided an opportunity to discuss the various on-going programmes,

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\* As per information supplied by the block for 1978-79.

the problems they are facing in implementation and the success they have achieved in carrying out their assignments. This will provide an opportunity to these field workers to share their experiences with fellow workers and to interact with their superiors. At the same time these workshops will help in working out the action plans for the new programmes that are going to be launched. A close scrutiny of the performance of these workers is necessary and a system of reward for meritorious work must be evolved through which the workers may be encouraged to do hard work. These awards may be in the form of cash award, additional increments or promotions. Further, it has been observed that the size of the target population in many a VLW circles is uneven as the population in some VLW circle/s is about half of some other circle/s of the block. This disparity must be removed and the VLW circles should be redemarcated so that the size of population of these circles become equal to the extent possible.

The number of VLWs appears to be sufficient in the block. However, it is felt that the block organization, by functioning as a centre for supplies of various inputs, is not able to maintain close association with the target population. The association of VLWs is also gradually reducing. A number of instances of ignorance of VLWs about their circles have come to our notice. This lead us to suggest that a close check on the performance of VLWs by ADOs is required as closer field contacts are necessary not only for successful implementation of various programmes but also for monitoring purposes. It is, therefore, suggested that every village of the block should be visited by the official/s at least once a month. The purpose of these visits should be : (a) to get

acquainted with the problems and prospects of development in each village; (b) to provide necessary guidance and help to the people; and (c) to prepare field notes for submitting them to the concerned officer.

The field notes submitted by various level officials should form an important agenda in the monthly staff meetings of the block. The performance of the block officials should be judged from the outcome of certain measures adopted under a programme and not merely from the fulfilment of targets reported by them. It is likely that achievements shown against certain targets, such as distribution of seeds, fertilizers, animals etc., do not necessarily indicate physical progress of the programme. It is, therefore, necessary to have regular feed back from the field through evaluation studies. With a view to develop capabilities of the block officials, arrangement should be made to impart training to BDOs and ADOs in monitoring and evaluation of programmes.

The above observations relate to the block level organization as the implementation agency. However, area specific development plans may also be evolved by the BDO in consultation with ADOs and this should be encouraged by the district and state level authorities. The BDO should also be imparted training for preparation of operational plans. The training programmes for BDOs may be organized at the state level and include areas such as techniques of area development planning, project formulation, appraisal, monitoring and evaluation. He may, then, be assigned the task of formulation of integrated area development plans for the block. With added responsibility for skilled assignments, the status of BDO needs

revision in the upward direction. Besides, monetary incentives should be given to those BDOs who have performed exceptionally well during a period, say of three years.

Since the development of backward areas require sustained hard work by the block staff, it is suggested that the BDO and his staff posted in such areas should be provided with some incentive such as the backward area allowance. More promotional avenues for the BDO's should also be explored to reward them on merit. While considering them for promotion weightage should be given to their performance in achieving the objectives of the development programmes, particularly, during their posting in backward areas.



Annexure - 1

Existing and Proposed Functions/Facilities in Different  
Inhabited Villages of the Block

Location Code as per 1971 Census	Name of Village	Existing Functions (Codes)*	Proposed Functions (Codes)*
1	2	3	4
1	Seonrhi	1 2 4	6 8
2	Salaiya Khalsa	1 4	
3	Gaungurho	1 4	
4	Hachatpur Khangaram	-	
5	Silarpura	1	
7	Budero	1 3 4	6
9	Masudpura	1 4	
11	Alipura	1 3 10	
13	Lidhura Khurd	1 3	
14	Girrauli	1 3 4	
15	Bendo	1 2 3 4 5 7 8 9 10 11 14	6 12 13 15 16 17 36
18	Laulara	1 3	
19	Chhanchri	-	
20	Niswara	4	
21	Jagpura Buzurg	-	6
24	Maragpura	1	
25	Turra Mohar	1 2 3 4	
26	Shargarh	1 4	
29	Jakha	1 3	
30	Sinaria	1 4 5	
33	Uldan	-	
34	Panwari	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 26 27 28 29 30 31 33	32 34 35 37
35	Lodhipura	1 4 5	6
36	Konia	1 5	
37	Chhatesar	1 4 6 12	
38	Haibatpur Brahmanan	6	

## Annexure - 1 (contd.)

1	2	3	4
39 Deoganpura	1 4		
40 Saragpura	-		
41 Alipura	1 4		
42 Raimalpura	4 6		
43 Bahadurpura Kalan	1 2 4 5 6		
44 Didwara	1		4 6
45 Negarra Ghat	1 3 5		
47 Barano	-		
48 Rupnaul	-		
49 Neikpura	1 3 5 9		
50 Kotra	1 3 5		
51 Bihat	-		
52 Luhargaon	1 3 5		
53 Nepura	1 3 4 5		
54 Sataura	-		
55 Marwari	1 3 5		
56 Kohania	1 2 3 5 14 15 23		4 6 7 8 9 10 11 12 13 16 17
57 Tikaria	1 3 5		4 6
58 Ricchara	-		4 6
59 Basaria Panwari	-		
60 Bamhauri Kurmin	1		
61 Thalaura	-		
62 Bhura	-		6
63 Tundar	-		6
64 Dhawar	1		
65 Ruri Khurd	-		
66 Khera Kalan	1 15		4 6
67 Dharwar	1 3 5		6
68 Lilwa	1 3 5		6
69 Kashipur	1 2		
70 Raipura Hardo Nisf	-		

## Annexure - 1 (contd.)

1	2	3	4
71 Umrai	1		
72 Taiya	1 3 4 5 6 8 10	7 9 11 12 13 14 15 16 17	
73 Teli Pahari	1	4	
74 Bagrauni	-	4	
75 Barendra Buzurg	-		
76 Garo	1	4	
77 Saunra	1 3 6	2 4 5 7 8 9 10 11 12 13 14 15 16 17	
78 Chauka	1 3 9		
79 Rawatpur Kalan	1		
81 Kuan Khera	-		
82 Manki	1		
83 Karehra Khurd Khera	-		
84 Chamarra	1	4 6	
85 Mahoba Kanth	1 2 3 4 5 6 7 8 9 10 11 12 14 15 16 23 27 29	17 18 20 21 22 24 28 37	
87 Kankuan	1 2 3 4 5 6 8 9 15 26	-	
88 Rewai	1 9	4	
89 Ruri Kalan	1 2 3 5	4 6	
90 Ghutai	1 3 9	4 5 6 7 8 10 11 12 13 14 15 16 17	
92 Imilia	-	6	
93 Didaura	-		
94 Pipri	1 3 25		
95 Kanora	1 3 5		
96 Garaura	1		
97 Bhadewas	-		
98 Amanpura	1 5		
99 Bhujpura	1 3 5		
100 Chapka	-		
101 Ghatera	1		
102 Santhar	-		

## Annexure - 1 (contd.)

1	2	3	4
103 Dadri	1		
104 Dulara	1 2 5 8		3 4 6 7 9 10 11 12 13 14 15 16 17
106 Tola Pantar	1		6
107 Para Pantar	1		4
108 Byarja	1 16		4
109 Tingra	-		
110 Itaura Buzurg	1		
111 Paharia	1 2 3 5 8 9 14 15		4 6 7 10 11 12 13 16 17
113 Bijrari	1 4		
114 Budora	1		
120 Jamala	6		
121 Gugaura	1		
122 Khera Nankhari	-		
123 Kilhauwa	1 2 3 4 5 6 8 9 15 23		7 10 11 12 13 16 17
124 Naugaon	1		
125 Phandna	-		
127 Nakra	1 2 3 4 5 6 12 14 23		
128 Khan Garra	-		
129 Natarra	1		
131 Bijaipur	1 2		

Note : \* Code numbers from 1 to 35 have been adopted as serial numbers of the functions/facilities listed in Table IV - 1, Chapter IV. Other code numbers used are : Mini Agro-Service Centre - 36; Mini Agro-Service Centre with one tractor for custom hiring - 37.

The existing functions shown in this annexure are based on the information furnished by the VLWs for the current year.

## Annexure - 2

### Physical Targets of the Proposed Programmes and Estimates of Additional Employment to be Generated During the Five Year Plan Period

Sector/Scheme	Physical Target		Persons/Person Years of Employment (No.)	
	Unit	Coverage	Norms	Additional Employment
1	2	3	4	5
<b>1. <u>Agriculture</u></b>				
1.1 Additional area under cultivation	Ha.	1490	1 per 1.5 ha.	993
1.2 Additional area under double cropping	Ha.	1645	1 per 1.5 ha.	1097
1.3 Additional area under HYV	Ha.	3700	1 per 3 ha.	1233
1.4 Establishment of seed stores	No.	6	4 per unit	24
1.5 Establishment of Mini Agro Service Centres with 1 tractor each	No.	2	7 per centre	14
1.6 Establishment of Mini Agro Service Centre	No.	1	6 per centre	6
<b>2. <u>Soil Conservation</u></b>				
2.1 Area to be treated	Ha.	3377	285 per 1000	962
<b>3. <u>Minor Irrigation</u></b>				
3.1 Additional Potential	Ha.	2375	1 per 500 for operation and maintenance	5
<b>4. <u>Animal Husbandry</u></b>				
4.1 Distribution of improved animals :				
a) she-buffaloes	No.	700	1 per 5 buff.	140
b) goats	No.	900	1 per 40 goats	23
4.2 Establishment of poultry farming units of 100 birds each	No.	6	1 per unit	6
4.3 Establishment of Stockman centres	No.	7	2 per centre	14
4.4 Establishment of AI Sub-Centres	No.	9	3 per centre	27

1	2	3	4	5
<u>5. Cooperation</u>				
5.1 Establishment of Cold Storage	No.	1	7 per unit	7
<u>6. Roads</u>				
6.1 Construction and maintenance of new roads	Kms.	37	17 per km.	629
<u>7. Industries</u>				
7.1 Establishment of small scale units	No.	16	-	376
7.2 Establishment of Khadi Gramodyog Units	No.	23	2 per unit	46
<u>8. Power/Electricity</u>				
8.1 Construction of HT/LT power lines	Kms.	30	1 per 2.76 kms.	11
<u>9. Education</u>				
9.1 Establishment of Senior Basic Schools	No.	4	8 per school	32
9.2 Establishment of Higher Secondary School	No.	1	16 per school	16
9.3 Establishment of Degree College	No.	1	52 per college	52
<u>10. Medical and Health</u>				
10.1 Establishment of Maternity and Child Welfare Centres	No.	3	3 per centre	9
10.2 Establishment of Allopathic Dispensaries	No.	5	4 per unit	20
GRAND TOTAL				5742



### Annexure - 3

#### Financial Outlays for the Proposed Programmes During the Five Year Plan

(Rs. in lakh)				
Sector/Scheme	State Sector	Institu- tional Finance	Individ- ual Con- tribution	Total
<b>1. <u>Agriculture</u></b>				
1.1 Distribution of seeds, fertilizers and pesticides	12.56	25.11	-	37.67
1.2 Field demonstrations of paddy, wheat and gram	00.099	00.197	-	00.296
1.3 Establishment of two mini agro-service centres with one tractor at each place	6.454	-	-	6.454
1.4 Establishment of one mini agro-service centre	2.582	-	-	2.582
1.5 Establishment of seed stores	4.20	-	-	4.20
Sub-Total	25.895	25.307	-	51.202
<b>2. <u>Soil Conservation</u></b>				
2.1 Reclamation of Culturable waste lands	22.35	-	-	22.35
2.2 Soil Conservation measures on lands already under cultivation	11.322	-	11.322	22.644
Sub-Total	33.672	-	11.322	44.994
<b>3. <u>Irrigation</u></b>				
3.1 Construction of 450 masonry wells	10.125	20.250	10.125	40.50
3.2 Distribution of 450 persian wheels	2.25	4.50	2.25	9.00
3.3 Distribution of 250 pump- ing sets	4.375	8.75	4.375	17.50
3.4 Construction of bundhies	2.25	4.50	2.25	9.00
3.5 Tractor driven well blas- ting-cum-custom hiring unit	1.87	-	-	1.87
Sub-Total	20.87	38.00	19.00	77.87

Sector/Scheme	State Sector	Institu- tional Finance	Individ- ual Con- tribution	Total
<u>4. Animal Husbandry</u>				
4.1 Distribution of she- buffaloes	6.77	13.53	-	20.30
4.2 Goat rearing project	1.935	1.845	-	3.78
4.3 Establishment of poultry farming units	0.046	0.14	0.132	0.318
4.4 Establishment of stockman centres	3.50	-	-	3.50
4.5 Establishment of AI sub- centres	3.15	-	-	3.15
4.6 Distribution of fodder seeds	0.008	-	0.007	0.015
Sub-Total	15.409	15.515	0.139	31.063
<u>5. Cooperatives</u>				
5.1 Establishment of one cold storage	-	-	5.00	5.00
Sub-Total	-	-	5.00	5.00
<u>6. Roads</u>				
6.1 Construction of kankar roads	22.20	-	-	22.20
Sub-Total	22.20	-	-	22.20
<u>7. Industries</u>				
7.1 Establishment of small scale industries	3.24	29.89	5.50	38.63
Sub-Total	3.24	29.89	5.50	38.63
<u>8. Power</u>				
8.1 Electrification of villages	12.00	-	-	12.00
Sub-Total	12.00	-	-	12.00

Sector/Scheme	State Sector	Institu- tional Finance	Individ- ual Con- tribution	Total
<u>9. Education</u>				
9.1 Establishment of senior basic schools	5.48	-	-	5.48
9.2 Establishment of higher secondary school	4.00	-	-	4.00
9.3 Establishment of degree college	18.00	-	-	18.00
Sub-Total	27.48	-	-	27.48
<u>10. Medical and Health</u>				
10.1 Establishment of mater- nity and child welfare centres	2.40	-	-	2.40
10.2 Establishment of dispen- saries	10.00	-	-	10.00
Sub-Total	12.40	-	-	12.40
GRAND TOTAL	173.166	108.712	40.961	322.839